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JASPER–HINTON AIR SERVICE DEVELOPMENT STUDY

IMC

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19 February 1988
File: 45-059-01-01

Alberta Tourism and Small Business
Development Branch
16th Flr., 10025 Jasper Avenue
EDMONTON, Alberta
T5J 3Z3

Attention: Mr. Fred McMullen

Dear Mr. McMullen:

Reference: Jasper/Hinton Air Service Development Study

Attached is the Jasper/Hinton Air Service Development Study final report. This report evaluates the feasibility of air service to Jasper/Hinton and proposes several development options as well as a strategy for achieving the community's long term air service development goals.

We sincerely appreciate the assistance provided by all those who participated in the study.

Yours truly,

IMC CONSULTING GROUP INC.

Darryl Howery

Darryl Howery
Associate

DH/llo
Attachment

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The objective of this study is to evaluate the feasibility of providing air service to the Jasper/Hinton Airport. Further, the study is intended to both identify the constraints inhibiting air service development, as well as develop options for minimizing or eliminating those constraints. The approach taken in this analysis involved several distinct tasks. First, the existing air service market was quantified by market sector and geographic area. Based on current estimated market demands, the various air service options were evaluated and carrier inputs regarding development possibilities were obtained. With the air service demand and supply parameters defined, an air service development strategy and specific development initiatives or options were defined. Finally, where appropriate, a break-even benefit/cost analysis was conducted to evaluate the feasibility of the development option.

Market Analysis

The current demand for air service to and from Jasper/Hinton is estimated to be approximately 41,000 inbound and outbound trips (equivalent to 82,000 origin/destination trips) per year. The current air service market is primarily comprised of inbound tourist travellers (96 percent of the total) with outbound business (2 percent), outbound tourism (1 percent) and inbound business travellers (1 percent) collectively comprising 4 percent of the total air service market. The inbound tourist market is seasonal and peaks dramatically in the summer months. Further, the air service market is spread across a wide geographic base, with no single market area comprising more than 15 percent of the total.

The estimate of air service demand is considered conservative in that it is based on current and historic travel patterns, and thus does not include the potential for growth in the number of trips taken to the area, nor the positive impact air service can have upon developing the inbound tourism market. A recent marketing study conducted for the Jasper Marketing Group indicates that through a comprehensive marketing plan alone, off-season hotel/motel occupancy rates could be raised by as much as 5 percent.

Air Service Analysis

While an analysis of the air service options for Jasper/Hinton indicates that current air service markets are of insufficient size to support direct air service on a scheduled basis, connecting air service, using Edmonton or Calgary as a gateway, is viable for at least the peak demand periods of the year (May through September). Due to the seasonal nature of inbound tourism to the area, and the large component of the total air service market this travel segment comprises, the small current off-season market would appear to limit the viability of year-round service.

The two major regional carriers in Western Canada, Time Air and Air B.C. have expressed interest in serving Jasper/Hinton. However, due to the current lack of equipment, the thin off-season market, and perceived risk of initiating service, Jasper/Hinton is not a priority development target in the very near term. The national and international carriers contacted indicated that the total size of the Jasper/Hinton air service market is too small for their consideration at this time.

Air Service Development Strategy

The optimal approach to developing air service to Jasper/Hinton, and achieving the community's ultimate goal of direct jet air service, is the incremental development of the air service market to the thresholds which can support increasingly higher levels of air service. This necessarily involves a step-by-step process whereby, in the short term, less ambitious milestones are achieved. The development scenario and milestones include:

- **STEP 1 - Scheduled Ground Link:** The development of a scheduled ground transportation link from an air gateway. The successful implementation of this service would be extremely important in demonstrating to an air carrier that the connecting air market exists.

- **STEP 2 - Regional Air Service:** The development of connecting air service which utilizes small to medium sized turboprop aircraft (i.e. Dash-7), from an air gateway (probably Edmonton, Calgary or possibly Vancouver) on a scheduled basis. The on-going success of this service will require some development of the off-season air market.

- **STEP 3 - Enhanced Regional Air Service:** This service would involve the expansion of the basic connecting service by additions of frequency, destinations or carriers, and be achieved following successful implementation of a base level of regional air service and the market development required to support a broader service.

- **STEP 4 - Direct Market Air Service:** Direct air service to the actual origins and destinations of the Jasper/Hinton air travellers will require significant development of specific air service markets and will only be viable following the successful implementation of regional air service.

The short term strategic initiatives or options identified concentrate on minimizing both the perceived risk of initiating air service to Jasper/Hinton, as well as developing a demonstrated ability to enhance off-season visitation. These are briefly outlined below:

- **OPTION 1 - Connecting Ground Services:** The integration of a connecting ground service with airline schedules and marketing will help alleviate access constraints, increase convenience of public transportation to Jasper/Hinton, and may stimulate off-season tourism activity.

- **OPTION 2 - Risk Sharing of Air Service Development:** A major constraint to the development of air service to Jasper/Hinton is the risk involved in initiating the service and developing the off-season market. In similar situations in the United States, communities have agreed to reduce these risks by entering into an air service agreement whereby the costs and benefits of market development are shared.

- **OPTION 3 - Off-Season Market Development:** Marketing efforts, as proposed by the Jasper Marketing Group, will help to build demand for air service in the off-season, and reduce the risks of air service development.

- **OPTION 4 - Airport Infrastructure:** The development of additional airport infrastructure is not currently a constraint to air service development in Jasper/Hinton, and should be considered only when the air service market has developed to the point where direct service with jet aircraft is viable.

It is recommended that the community quickly pursue the development of a scheduled ground service link which is integrated with the air transportation system. The success of this development will clearly demonstrate a demand for such a service and may stimulate off-season tourism in the area. Second, it is recommended the community pursue the possibility of sharing with the air carriers, the risk and cost of developing a connecting regional air service to Jasper/Hinton. Third, the on-going off-season market development strategy should be pursued with the development of a complementary and integrated transportation network, including air service. Finally, additions to the airport's infrastructure are unnecessary at this time and should be pursued only when the air service market matures to the point where direct air service is viable.

Benefit/Cost Analysis

A break-even/cost analysis was conducted for both the risk sharing option (Option 2) and airport infrastructure development option (Option 4). This analysis included the cost invested in the option, and determined the incremental increase in tourism required to equally off-set the investment. Other costs and benefits, such as travel time savings, economic stability, etc. were not incorporated into the analysis.

It is estimated that the risk sharing option (Option 2) would require an annual subsidy of $0.5 million to $2.0 million annually. Assuming the actual subsidy negotiated falls within this range at $1.0 million per year, the break-even incremental tourism threshold is estimated at 9,300 visitors. This represents approximately 25 percent of the estimated current air service market, and a relatively small increase in total tourist visits to the region, of less than one percent.

It is estimated the airport infrastructure development option (Option 4) would require a total investment of $16 million. The break-even incremental tourism threshold is estimated at approximately 150,000 visitors. It should be noted this option is not an alternative to Option 2, and is only relevant when the air service market is developed to the point where direct scheduled air service can be supported.

SECTION 1.0
INTRODUCTION

1.0 INTRODUCTION

The potential for air service to the Jasper/Hinton area has been investigated several times over the past decade. Most of these studies have been components of a justification for expansion of airport facilities in the area. The potential demand for air service to the region has been acknowledged in each of these previous studies. Further, the need for air service is currently perceived to be essential to the continued economic development of the Jasper tourism industry, and also a facilitator for enhancing business development in the Hinton area.

1.1 OBJECTIVES OF THE STUDY

The primary objective of this study is to evaluate the feasibility of providing direct air service to the Jasper/Hinton airport. Further, this study is intended to both identify the constraints inhibiting air service development and options for minimizing or eliminating those constraints. This involves the specific analysis of the following areas:

- **Demand Potential:** The potential demand for air service to and from the Jasper/Hinton area.

- **Supply Considerations:** An evaluation of the service which can be supported by the demand as well as other air service considerations.

- **Air Service Feasibility/Options:** A determination of the feasibility of air service and the development of specific options which address constraints in the development of that service.

- **Infrastructure Requirements:** An evaluation of the airport infrastructure and related service requirements for air service.

- **Benefit/Cost Analysis:** A determination of the costs and benefits of specific air service development options.

1.2 STUDY APPROACH

The approach taken in addressing these objectives can be summarized in three steps. The first involved an evaluation of the potential demand for air trips to and from the Jasper/Hinton area, and a preliminary analysis of the selected air service options and their potential.

The second step involved discussions with air carriers and tour operators/wholesalers regarding the results of this analysis, with the specific purposes of: obtaining feedback regarding their view of the results; the potential for air service to the region; and the specific constraints and concerns they have with respect to initiating service to Jasper/Hinton. This particular component of the approach is a deviation from that which may normally be taken in a study of this type. However, these discussions were a key link in creating an awareness of the potential for the Jasper/Hinton air service market and developing a strategy for progressing toward the development of the level of service envisioned for the area.

The final step in the analysis was the preparation of an air service development strategy and evaluation of the strategy options. Key to this strategy was the development of possible solutions to the concerns of carriers regarding initiating a service to Jasper/Hinton.

1.3 BACKGROUND

A brief overview of the Jasper/Hinton regional economy and the Jasper/Hinton airport facilities are provided below.

1.3.1 Regional Overview

The Town of Hinton is situated 29 kilometres from the east gate of Jasper National Park and 287 kilometres west of Edmonton. In addition to being the base for three coal mines, a pulp mill, and the Forest Technology School, its economy is active in natural gas, petroleum, and agricultural industries. The 8,904 (1986) town residents are primarily employed by Champion Forest Products (Alberta) Ltd., Gregg River Resources, Cardinal River Coals, and Obed Mountain Coal Co. There are approximately 131 (1985) retail trade and service outlets which constitute total receipts for the area of over $82 million. The Town of Hinton also supports approximately seven (1983) manufacturing establishments.[1]

Set in the Canadian Rockies, Jasper National Park is one of the major tourist attractions in the province and the country. The major attractions in the region are Marmot Basin, Miette Hot Springs and the numerous camping facilities found throughout the park. Park visitation is highly seasonal as reflected in room occupancy rates, which peak in August at 90 percent and fall to a low of 25 percent in January. Virtually all economic activity including the retail and service trade within Jasper is directly, or indirectly, dependent on the tourist trade. This makes the area susceptible to the large seasonal fluctuations in tourist activity.

Jasper provides 1,240 man-years of employment in meeting tourism visitor demands. This is comprised of 107 and 894 man-years in the retail and service trade sectors, respectively, and 239 man-years for Parks Canada. The 1986 average annual occupancy rate for Jasper's 25 fixed roof accommodation facilities was 67 percent. Visitor expenditures for accommodations in Jasper National Park is estimated at over $25 million.[2]

---

1 Alberta Locations - Hinton, Alberta Economic Development and Trade, October, 1981

2 Alberta Rocky Mountain National Parks - User Profile, PCM Construction Control Consultants Ltd., February, 1985.

1.3.2 Jasper/Hinton Airport

The Jasper/Hinton airport facility currently in place was completed in 1978. The existing runway is 4,500 feet and can meet the full operational requirements of the size of DASH-7 and DASH-8 aircraft, which are currently used for commercial aviation in North America and the regional carriers in Canada. The navigational aids available include runway lighting, a non-directional beacon (NDB) and a microwave landing system (MLS). The airport has a terminal building which is approximately 1,200 square feet in size and can accommodate peak hour passenger volumes of approximately 30 passengers.

1.4 REPORT ORGANIZATION

This report has been organized into five sections. Following this introductory section, the remaining sections are as follows:

- **Market Analysis:** A review of the relevant market area, an estimation of potential air trips generated to and from Jasper/Hinton, and a brief discussion of the potential for growth.

- **Air Service Analysis:** A review of the air service options and an evaluation of the demand thresholds and constraints for each option.

- **Air Service Development Strategy:** A discussion of the options available for building towards the desired level of air service and a framework within which these goals may be achieved.

- **Benefit/Cost Analysis:** An evaluation of the costs and benefits of selected air service and air infrastructure development options.

SECTION 2.0
MARKET ANALYSIS

2.0 MARKET ANALYSIS

The purpose of the market analysis is to quantify the demand for air service both to and from the Jasper/Hinton area. This analysis has been conducted in such a manner as to allow for a breakdown of the market by both geographic area and trip purpose.

The basic market analysis has been conducted on the basis of current and historic levels of tourism, and economic activities in the region. The future growth of the air market and the role which air service can play in enhancing Jasper/Hinton as a tourist destination are discussed in the final section of this analysis.

2.1 MARKET DEFINITION

The development of air service demand estimates has been based on a specific geographic market area which may be served by the Jasper/Hinton Airport. In addition, each market segment has been analyzed separately. These factors are discussed below.

2.1.1 Geographic Market Area

The Jasper/Hinton Airport is located 10 kilometres west and north of the Town of Hinton. It can reasonably be expected that this airport will serve the needs of the Towns of Hinton and Jasper, as well as other destinations within the Hinton area and Jasper National Park. In addition, because of both its proximity and the relatively better road link south, the air service needs of Grande Cache would be more conveniently met by Jasper/Hinton than Grande Prairie. Thus, Grande Cache has been included in the Jasper/Hinton Airport market areas (see Figure 1).

Those market areas north of Grande Cache, east of Hinton and west and south of the Jasper National Park boundaries have been excluded from the analysis. Of note, is the exclusion of Edson from the relevant market study area. Due to Edson's location of 85 kilometres east of Hinton, and its relative proximity to Edmonton

FIGURE 1

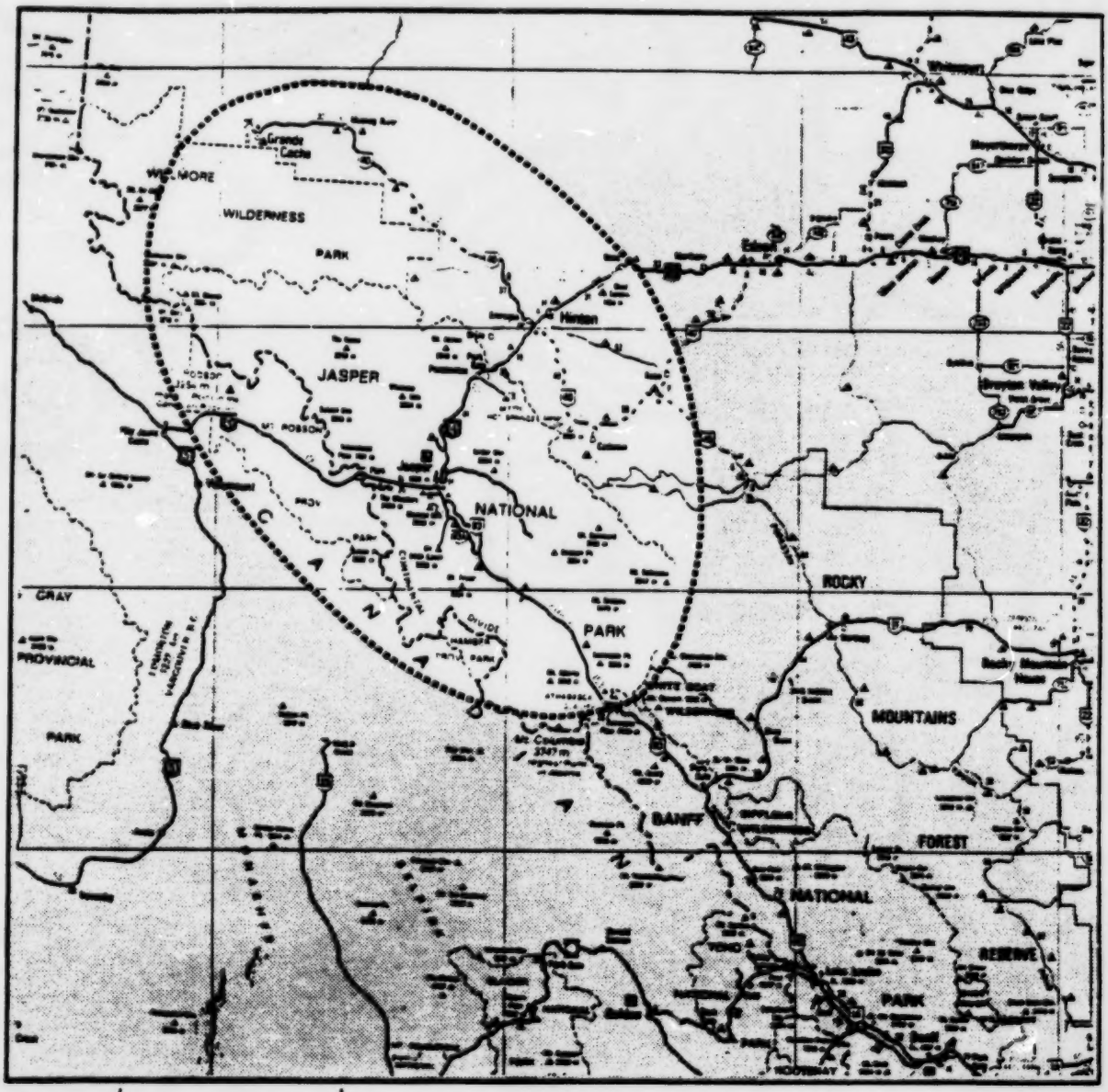

Figure 1

GEOGRAPHIC MARKET AREA

(200 kilometres west), it is unlikely Jasper/Hinton will capture a significant proportion of the Edson air service market. It should be noted that to the extent Jasper/Hinton would capture air passenger trips from outside the identified market study areas, the results of this analysis underestimate the total Jasper/Hinton market.

2.1.2 Market Segments

To enhance the evaluation of the potential for air service, the market analysis has been conducted separately for three distinct market segments. These are defined as follows:

- **Tourism/Recreation:** Trips taken for vacation purposes including skiing, conventions, park visitation and other recreational purposes.
- **Business:** Trips taken for business purposes.
- **VFR/Personal:** Visiting friends and relatives (VFR) and other trips taken for personal reasons.

For each of these market segments, both the inbound and outbound components have been analyzed separately.

2.2 TOURISM MARKET

The inbound and outbound tourism markets have different characteristics and air service requirements and thus have been analyzed individually. The results of this analysis are summarized below.

2.2.1 Inbound Tourism Market

The inbound tourism market segment almost entirely consists of those visitors to the Jasper/Hinton region who travel to the area for vacation and recreation purposes.

Market Overview

Jasper is the primary destination for the vast majority of inbound tourists to the Jasper/Hinton area. Jasper is a world class tourist destination, drawing approximately one million visitors annually from all over the world.[1,2] The Hinton area also attracts a substantial number of tourists (approximately 80,000 annually),[3] a large number of whom stop in the Hinton area on their way to other destinations in Alberta and beyond. Hinton has the potential to add to its case of attractions and to become a more important tourist destination.

A composite view of the Jasper/Hinton inbound tourism market is presented in Figure 2. Over two-thirds of the area visitors are Canadians. Alberta residents comprise the single largest visitor component, contributing over 40 percent to the Jasper/Hinton tourism totals. British Columbia and Ontario are the next largest Canadian markets, contributing approximately 15 percent and 6 percent to total visitation respectively. Saskatchewan and Manitoba each comprise just over 3 percent to the total, and Quebec/Maritimes comprises just under 2 percent.

United States residents comprise approximately 22 percent of total area visitors. Each region of the U.S. (West, Central, East) contributes approximately the same amount to the total. Individual markets making a significant contribution to the U.S. total include California, New York and Washington.

Residents from other countries (overseas) comprise approximately 7 percent of total visitation. Of this total, the United Kingdom contributes approximately one-half (3.5 percent) and West Germany 2 percent. The Asia market, which is primarily dominated by Japan, comprises only 1 percent of the total.

An important characteristic of the inbound tourism market segment is its seasonal nature. Visitations to the study area are heavily concentrated in the summer months (see Figure 3). Almost two-thirds of total annual Jasper visitation occurs during the

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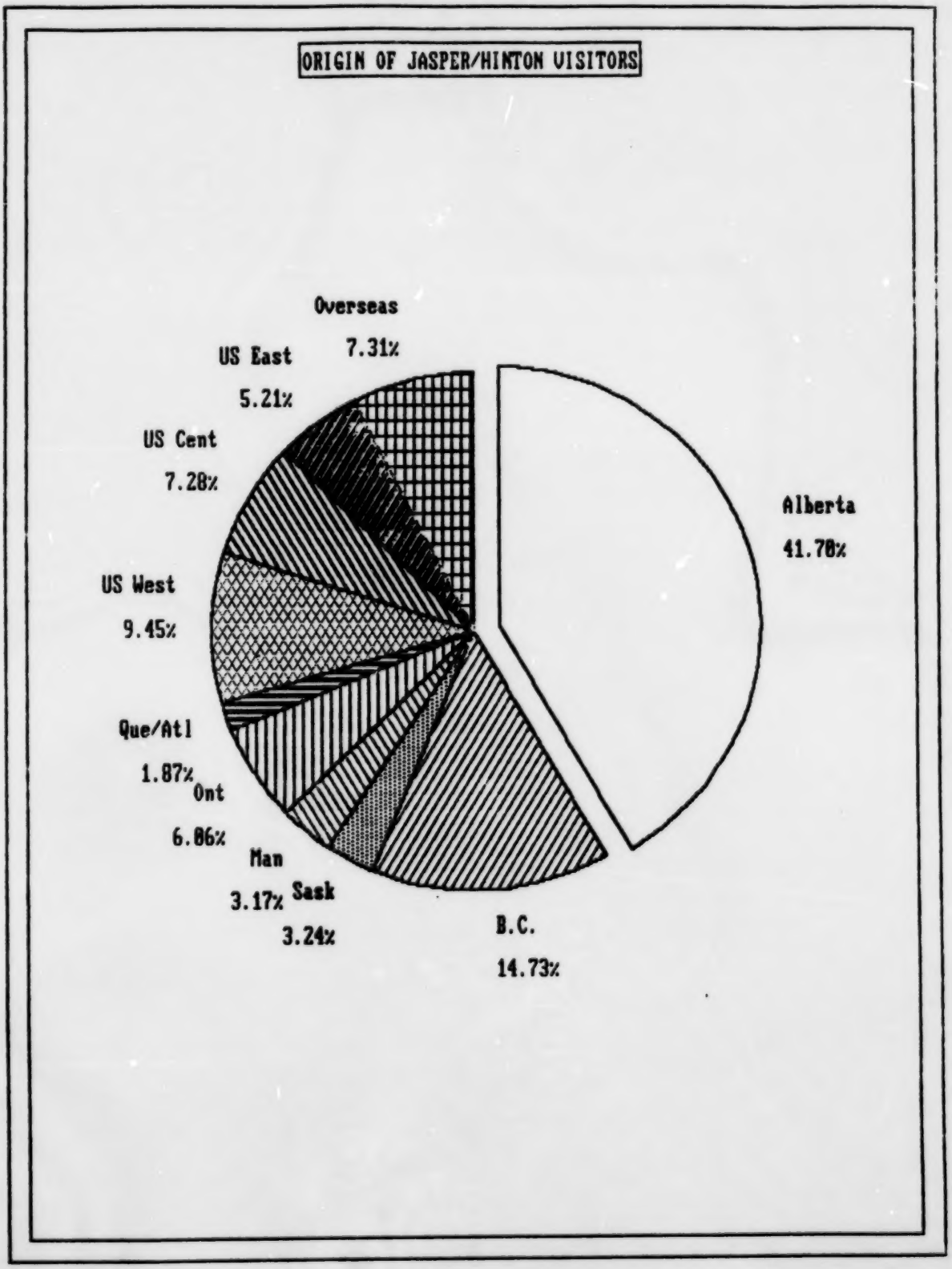
1 Visitors are defined as individuals for whom the area is a primary destination, regardless of length of stay.

2 Source: Alberta Rocky Mountain National Parks User Profile Survey - 1985

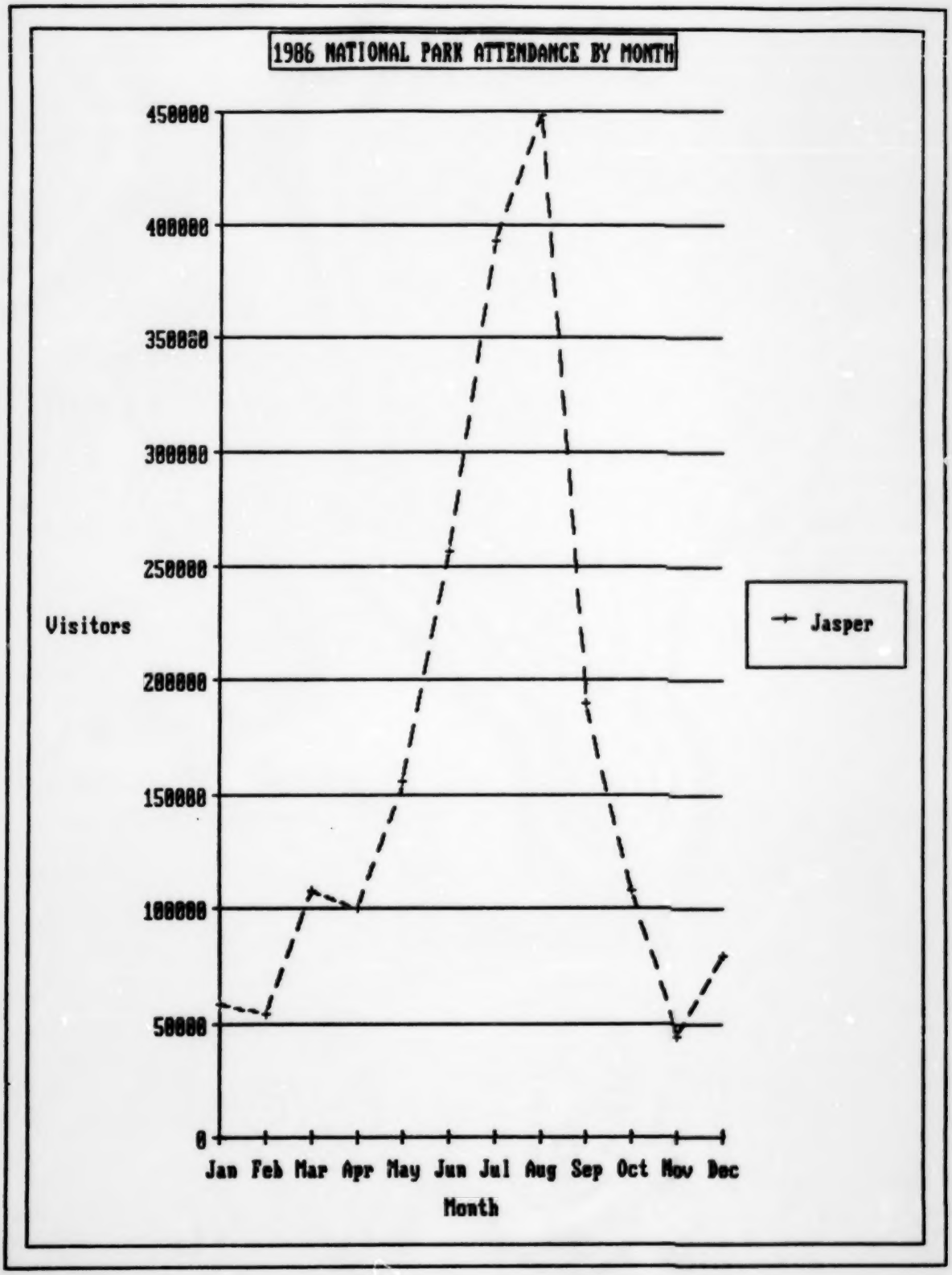
3 Source: 1982 Alberta Travel Survey

FIGURE 2



Source: Alberta Rocky Mountain National Parks User Profile Study

FIGURE 3



Source: Alberta Rocky Mountain National Parks User Profile Study

summer months (June - September). In addition, over 40 percent occurs during the two months of July and August. As will be discussed in Section 3.0, this has significant implications for the potential of scheduled air service to Jasper/Hinton.

Air Service Demand Analysis

The proportion of the total inbound tourism market which can be captured by air service has been estimated by applying several factors to the total visitation data, with the purpose of identifying that segment of the market with a high propensity to fly. Each of the factors applied to estimate the air service demand for the inbound tourism market segment is discussed below.

- **Non-Alberta Residents:** Given the relative proximity of Alberta residents to the Jasper/Hinton area, it is unlikely that these residents will generate a significant number of air trips. Thus, only the non-Alberta residents have been included for further analysis for this market segment.

- **Currently Fly to Alberta:** Those Jasper/Hinton visitors who currently fly from their place of origin to a point in Alberta will have a significantly higher propensity to fly to Jasper/Hinton (either directly or via a connecting service).[4] As the proportion of visitors selecting air as a mode of travel to Alberta varies significantly depending upon their distance from Alberta, the analysis was conducted by geographic area. The weights applied to each geographic area are summarized in Figure 4.

- **Primary Destination:** Those Jasper/Hinton visitors for whom the study area is a primary destination are more likely to be users of air service than those visitors for whom Jasper/Hinton is an ancillary destination. As with the current selection of mode of travel to Alberta, the proportion of Jasper

4 For example, it is unlikely that Jasper/Hinton visitors originating in Los Angeles, would drive to Edmonton, and fly from Edmonton to Jasper/Hinton. It is much more likely that if they were flying from Los Angeles to Edmonton, that they would either take a connecting flight from Edmonton to Jasper/Hinton, or be interested in flying directly from point to point.

visitors for whom Jasper is a primary destination varies significantly by place of residence. The weights which have been applied to each geographic market area are summarized in Figure 4.

- **Air Service Capture Rate:** Of those potential Jasper/Hinton air passengers who currently fly to Alberta, and for whom Jasper/Hinton is a primary destination, there will be a segment who will choose not to fly. While it is difficult to estimate what this proportion is without having the benefit of location specific historical data, the experience of a similar situation to Jasper/Hinton has been employed to provide a proxy for what might be expected here.

  Aspen Colorado is both a summer and winter mountain resort area located approximately 400 kilometers from Denver.[5] Currently, Aspen is served by two regional air carriers with 15 flights per day from Denver. All connecting flights utilize Dash-7 and Convair aircraft. Both airlines have indicated that approximately 80 percent of those passengers flying to Denver, with Aspen as their destination, utilize the connecting air service between Denver and Aspen. This weighting has been applied to the Jasper/Hinton analysis.[6] It must be recognized that the level of air service frequency in the Aspen/Denver market is substantially greater than that which is anticipated for Jasper/Hinton (at least initially) and this may affect the total air market capture rate. This potential affect has not been controlled for in this analysis.

Summary of Results

The resulting air passenger totals for this market segment were calculated by applying each of the above described factors to visitation totals for each major geographic area. The visitation totals and factors used in the calculations are provided in Appendix A.

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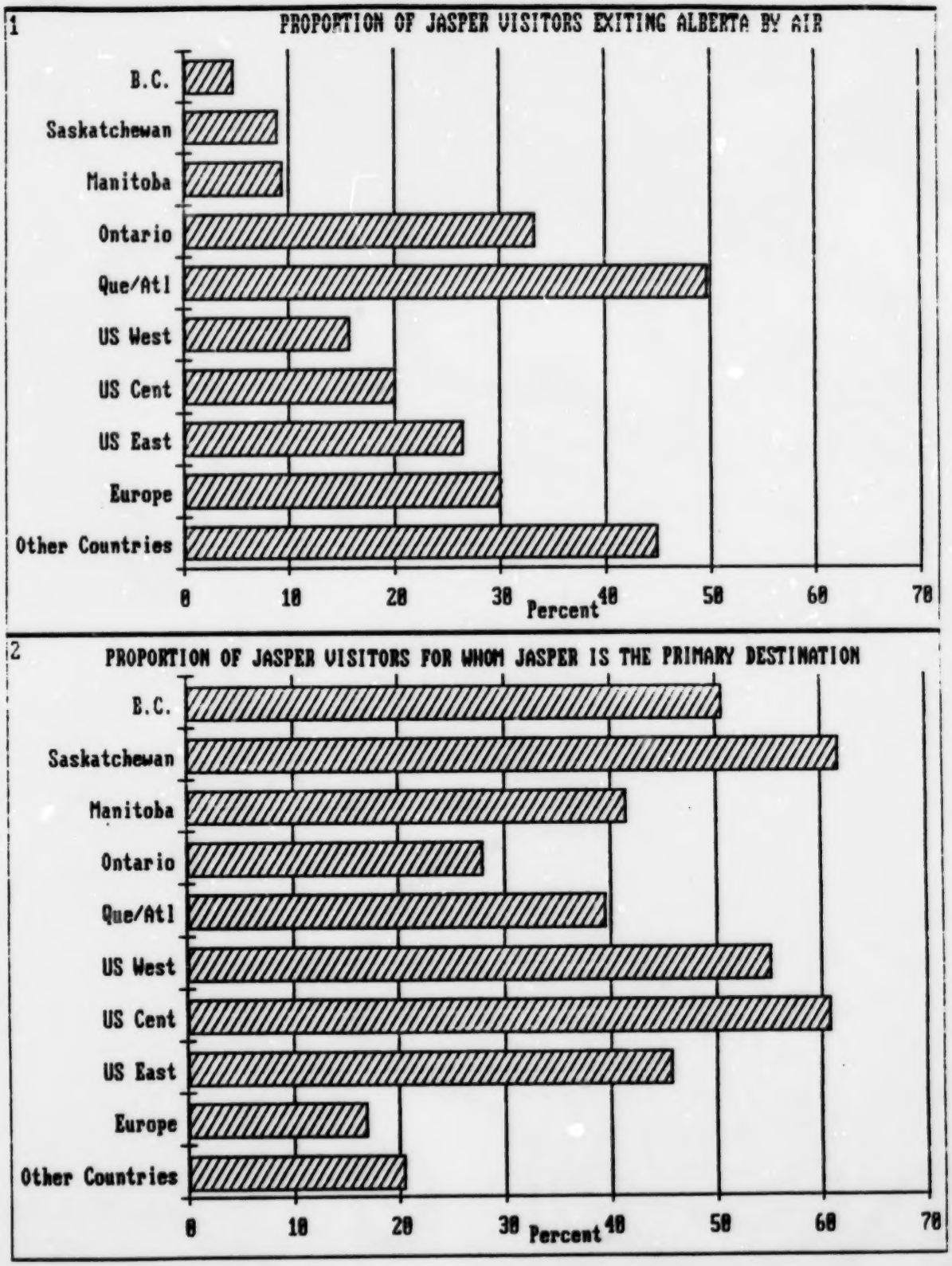
5 Jasper, by comparison is approximately 360 kilometres from Edmonton and 410 kilometres from Calgary.

6 By contrast, the air capture rate for traffic to Vail, Colorado (which is approximately 150 kilometres from Denver) is only 20 percent.

FIGURE 4



Source: 1982 Alberta Travel Survey

Based on the factors discussed above, the current inbound tourism market segment which could be diverted to air service is estimated to be 38,700 users per year.[7] The distribution of this market segment by place of residence is summarized in Figure 5. Canadian residents contribute 51 percent to this total, with Quebec and Ontario being the primary market areas. United States residents contribute 43 percent to the total, with U.S. West Coast market being the primary market area. Other countries comprise approximately 6 percent of the total market.

2.2.2 Outbound Tourism Market

The outbound tourism market consists of those Jasper/Hinton area residents travelling out of the region for vacation and recreation purposes.

Market Overview

The relevant portion of the Jasper/Hinton outbound market segment consists of those vacationers who are currently flying on some portion of their trip, or are headed to destinations for which air is a reasonable transportation alternative. Based on discussions with travel agents working in the study area, approximately 1,000 to 1,500 trips of these types are booked out of the region annually. The majority of vacation air trips are currently to points in Eastern Canada, the U.S. West Coast and sunspots (Hawaii, Mexico). Almost all these trips use Edmonton as the Alberta air gateway. In addition, most of these vacations are booked during the months of October to May. Virtually none are booked during the summer vacation months.

Air Service Demand Analysis

The utilization of air service from Jasper/Hinton by this market segment will depend critically upon its cost and convenience (in terms of preferred departure and arrival times, as well as connections with other flights). For the purposes of assessing the relative importance of cost, it was assumed that the incremental air

7 It should be noted each user represents two air trips, one to Jasper/Hinton and one out. Therefore, this is equivalent to 77,400 origin/destination passenger trips per year.

costs for the Jasper/Hinton air portion of the journey would be $100 to $150 per round trip.[8] Based on this cost, it is estimated that approximately 50 percent of the relevant market segment would be interested in air service.[9]

It should be noted that this estimate excludes the aspect of convenience of the service. It is unlikely that scheduling of service would be convenient to all potential passengers and, as a result, the potential air service market would be reduced accordingly. As the question of convenience depends upon scheduling and routing considerations, this aspect is addressed in Section 3.0.

Summary of Results

The outbound tourism market segment is estimated to contribute 500 to 750 air service users per year.[10] The destinations of these users are profiled in Figure 5. Eastern Canada is the primary destination for approximately one-half of the potential users, with the U.S. West Coast and sunspot destinations each comprising approximately one-quarter of the total.

2.3 BUSINESS MARKET

As with the tourism market, the outbound and inbound tourism markets have been analyzed individually, the results of which are summarized below.

2.3.1 Outbound Business Market

The outbound business market consists of those individuals travelling out of the study area for business purposes.

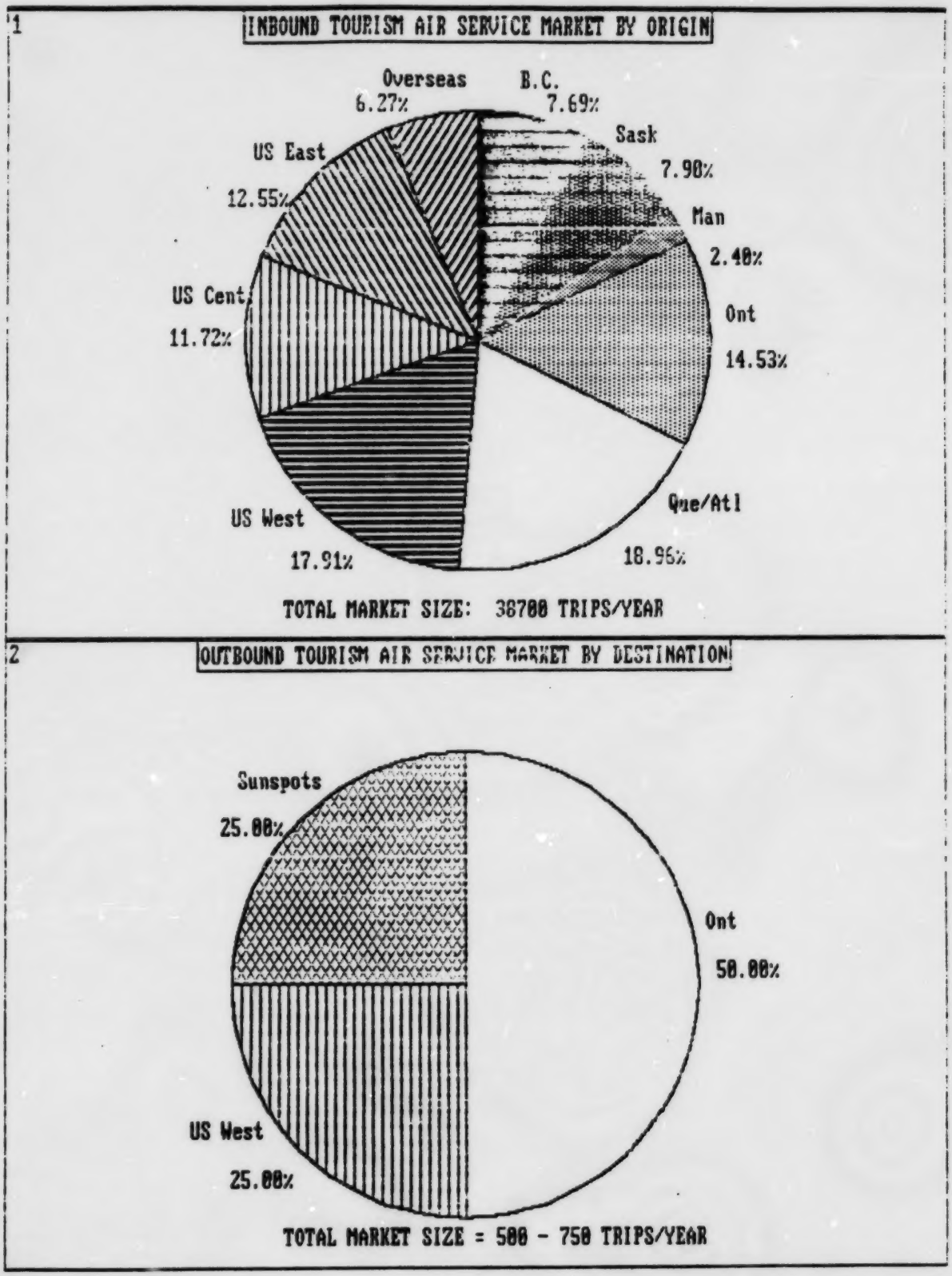
---

8 In the context of this market segment, connecting air fares for routes with similar stage lengths were used as a basis for estimating potential fare levels.

9 Based on discussions with travel agents operating in the study area.

10 This is equivalent to 1,000 to 1,500 origin/destination passenger trips per year.

FIGURE 5


1
INBOUND TOURISM AIR SERVICE MARKET BY ORIGIN
Overseas
6.27%
B.C.
7.69%
Sask
7.90%
Man
2.40%
Ont
14.53%
Que/Atl
18.96%
US West
17.91%
US Cent
11.72%
US East
12.55%
TOTAL MARKET SIZE: 36700 TRIPS/YEAR
2
OUTBOUND TOURISM AIR SERVICE MARKET BY DESTINATION
Sunspots
25.00%
Ont
50.00%
US West
25.00%
TOTAL MARKET SIZE = 500 - 750 TRIPS/YEAR

Market Overview

The outbound business market segment relevant to this analysis consists of those business passengers who are currently using air service for a portion of their trip, or when air service is a reasonable alternative. This latter group would include business travellers with a relatively high value of time. The size of this market is estimated at 1,100 to 1,700 trips (one-way) per year.[11] The majority of these trips (90 percent) are generated by business and government functions located in the Hinton area. The remaining trips are generated by businesses located in Grande Cache. The number of outbound business related trips with some potential for air travel originating from Jasper would be minimal.

Air Service Demand Analysis

As discussed above, the utilization of air service based in Jasper/Hinton by this market segment will depend upon its cost and convenience. Using the round trip cost of $100 to $150, it is estimated that the air capture rate would be approximately 80 to 90 percent. As expected, business travellers would be less price sensitive than the vacation/recreation traveller.

Aspects of convenience, such as routing and scheduling are also important to this market segment, and will be dealt with quantitatively in Section 3.0.

Summary of Results

The outbound business market segment is estimated to contribute 900 to 1,500 air service trips per year.[12] The destinations of these trips are profiled in Figure 6. Alberta is the primary destination, comprising 70 percent of the total market (Edmonton 60 percent and Calgary 10 percent). British Columbia (Vancouver) is also a major destination comprising 20 percent of the total market. The remainder of this market segment consists of trips to points in Ontario as well as both the U.S. West and East coast regions.

11 Based on discussions with travel agents and businesses located within the study area.
12 This is equivalent to 2,000 to 3,000 origin/destination passenger trips per year.

2.3.2 Inbound Business Market

The inbound business market consists of those individuals travelling to the study area for business purposes. It should be noted that convention related trips have been included in the inbound tourism market segment.

Market Overview

The majority of inbound trips which are potential candidates to utilize air service are generated by the business and government functions located in Hinton. These are trips which would be made by corporate or government officials, based outside the area, who travel to Jasper/Hinton for business purposes. In addition, several enterprises bring clients in to view their operations on semi-regular basis.

Summary of Results

Based on discussions with the businesses in the area, it is estimated that the inbound business trip segment would generate 300 to 400 users per year.[13] The origins of these trips are profiled in Figure 6. Edmonton would be the primary origin of approximately one-half of these trips. Other origins of this traffic include Vancouver, points in the United States, Korea, Japan and Sweden.

2.4 VISITING FRIENDS AND RELATIVES (VFR)/PERSONAL TRIP MARKET

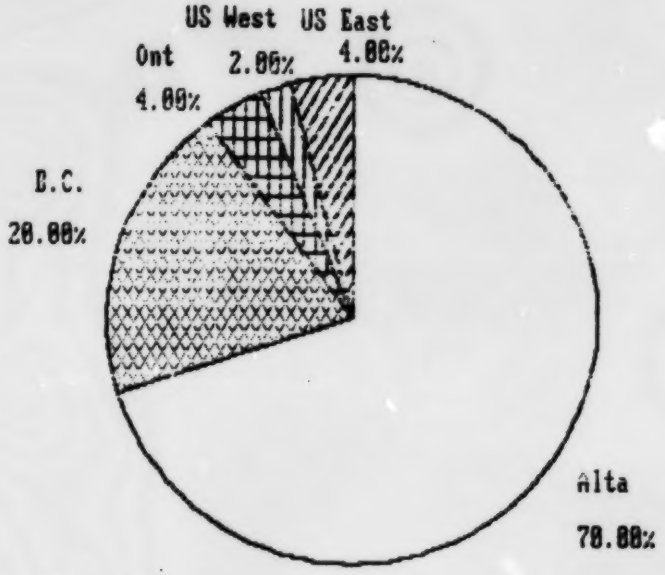
This market segment consists of trips taken for the purposes of visiting friends and relatives, emergencies and other personal reasons. The number of VFR/personal trips generated by a region depends largely on the size of the area's population base and the relative cost of the service. It is expected that the relative cost of the air service versus other modes of travel will substantially inhibit a large proportion of the region's population using air service for this purpose. Further, as the study area

13 This is equivalent to 600 to 800 origin/destination passenger trips per year.

FIGURE 6

1

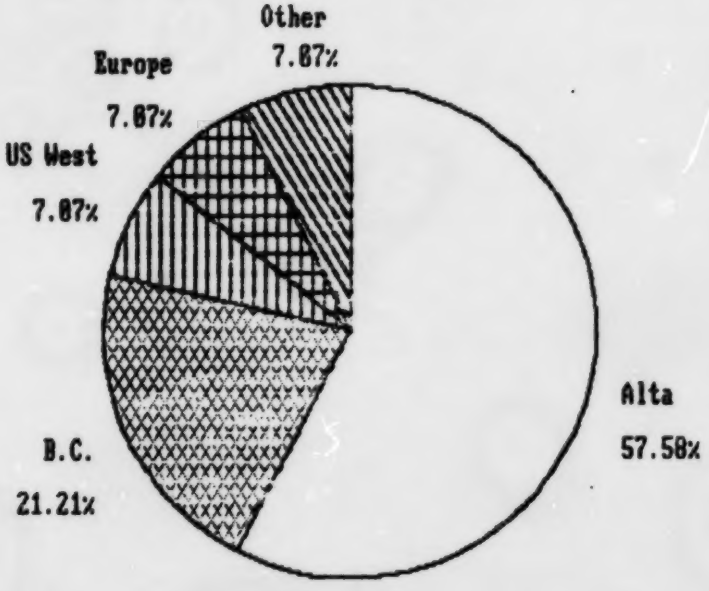
OUTBOUND BUSINESS AIR SERVICE USERS BY DESTINATION



TOTAL MARKET SIZE = 900 - 1500 TRIPS/YEAR

2

INBOUND BUSINESS AIR SERVICE USERS BY ORIGIN



TOTAL MARKET SIZE = 300 - 400 TRIPS/YEAR

has a relatively small population base of approximately 17,000, a minimal number of air passengers travelling for these purposes will be generated. As a result, this market segment has not been considered further in the analysis.

2.5 SUMMARY OF RESULTS AND OTHER CONSIDERATIONS

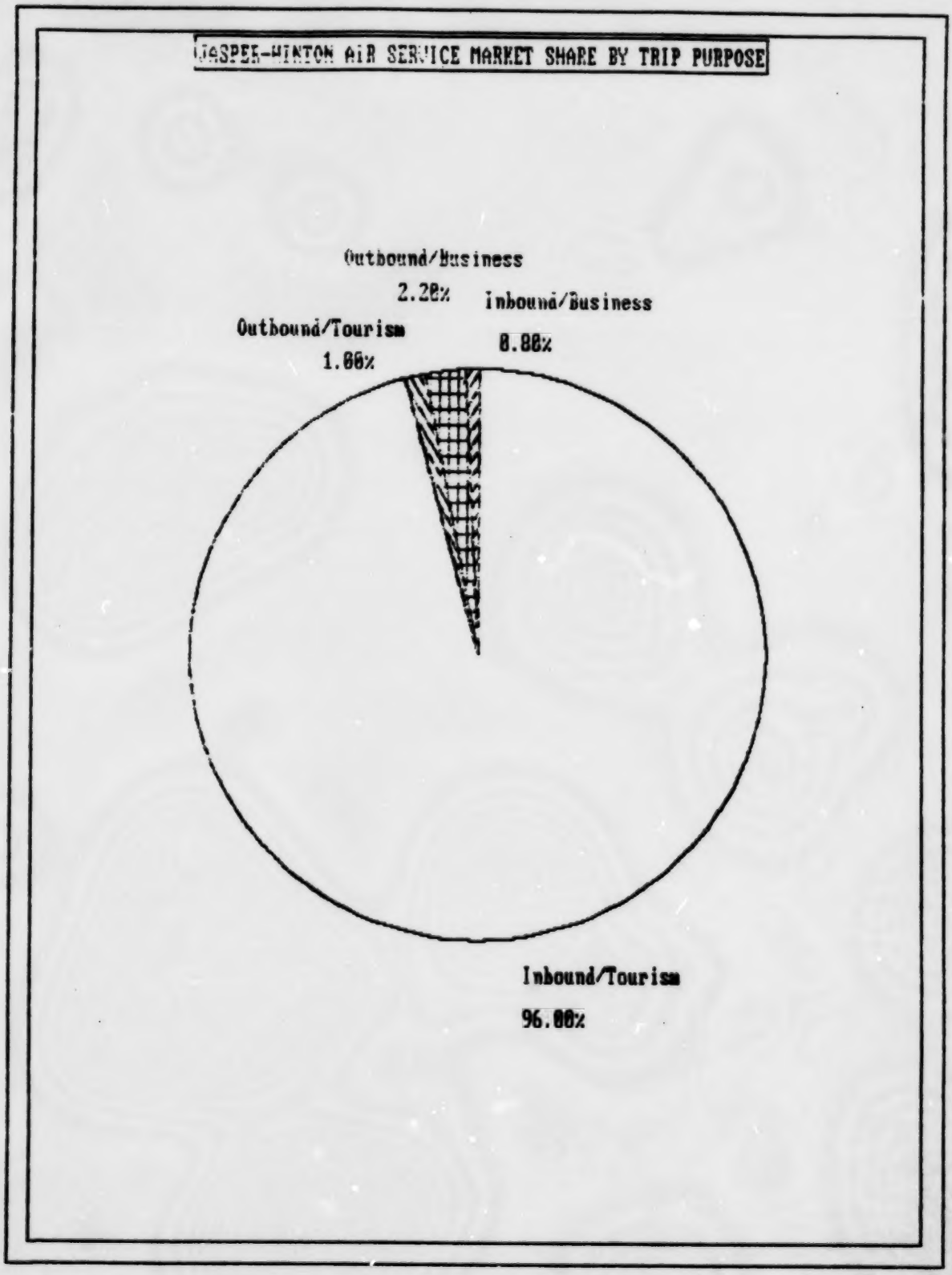
The current demand for air service to and from Jasper/Hinton is estimated to be approximately 41,000 inbound and outbound (two-way) trips per year. This would be equivalent to approximately 82,000 origin/destination passenger trips annually. The contribution to this total made by each market segment is profiled in Figure 7. The inbound tourism market is by far the single most important market segment, and comprises 96 percent of the total air service market. The remaining market segments collectively comprise only 4 percent of the total.

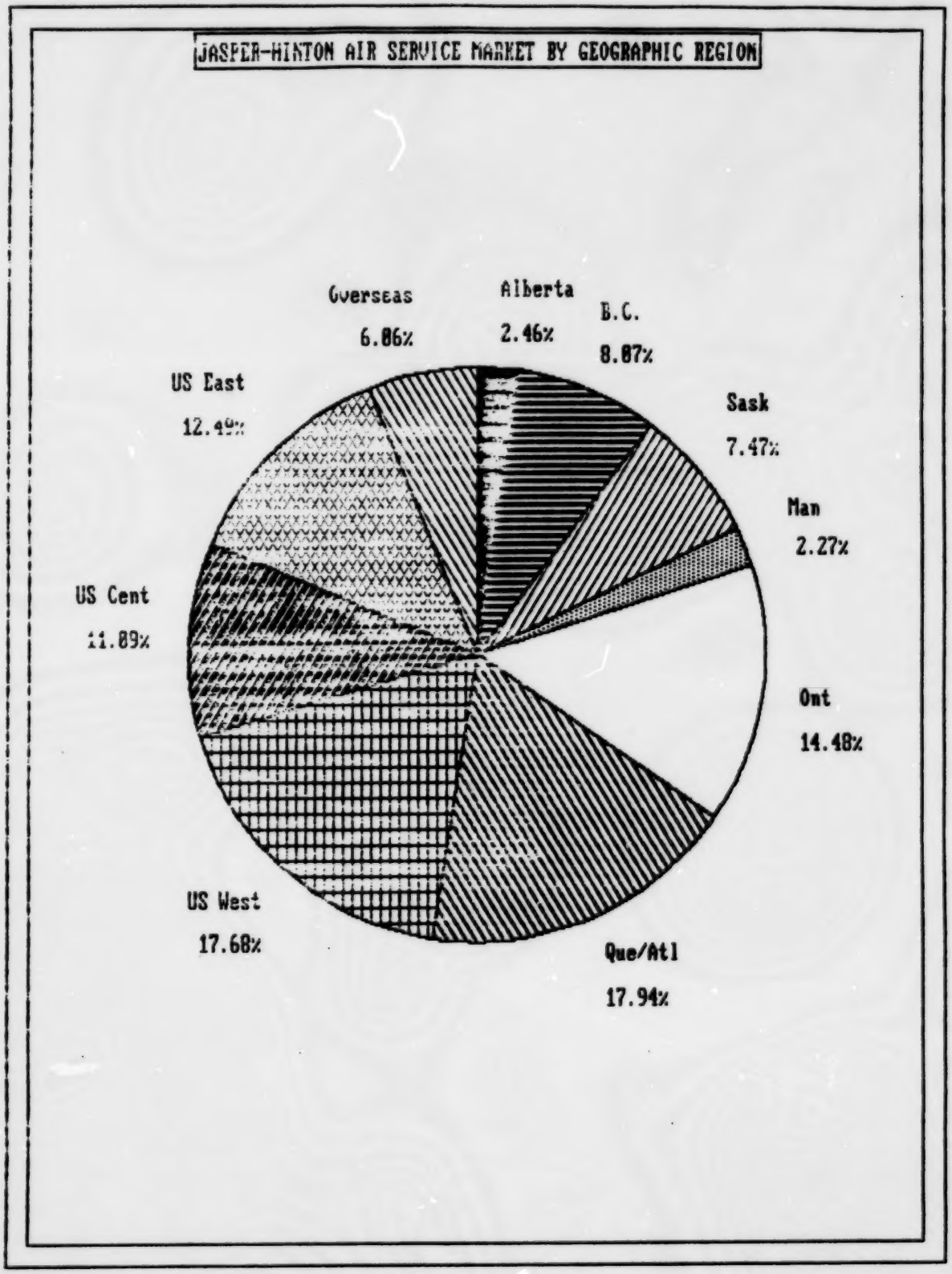
An important feature of the Jasper/Hinton air service market is its geographic distribution (see Figure 8). While Canadian markets dominate the total (53 percent), the market share is spread across a number of provinces. The same is true for the United States markets, where no individual geographic area dominates. Other countries contribute only a small portion to the total air service market (6 percent).

2.5.1 Conservative Approach to Air Market Analysis

It should be noted that, especially with respect to the inbound tourism market, a conservative approach to estimating market demand has been taken. Specifically, this analysis does not account for potential air users currently flying to non-Alberta gateways (i.e. Vancouver) who have Jasper as a primary destination. In addition, this analysis does not account for the possibility of circle tours, of which Jasper currently plays a major role and for which Jasper/Hinton could be an air gateway. As well, throughout the market analysis, marginal contributors to the total air service market have been explicitly excluded. This analysis also does not account for potential growth in each of the market segments, nor the role which air service itself can play in enhancing demand.

FIGURE 7


JASPER-HINTON AIR SERVICE MARKET SHARE BY TRIP PURPOSE
Outbound/Business
2.20%
Inbound/Business
0.80%
Outbound/Tourism
1.00%
Inbound/Tourism
96.00%


JASPER-HINTON AIR SERVICE MARKET BY GEOGRAPHIC REGION
Overseas
6.86%
Alberta
2.46%
B.C.
8.87%
US East
12.49%
Sask
7.47%
Man
2.27%
US Cent
11.89%
Ont
14.48%
US West
17.68%
Que/Atl
17.94%

2.5.2 Potential Growth

Growth in the demand for air service to Jasper/Hinton will occur with increased economic activity in the study area, and with a growth in the volume of inbound tourism activity primarily in Jasper. An increase in the level of economic activity in the area will result in an increase in demand for business related air trips as well as outbound tourism related trips. However, as these market segments make a relatively small contribution to the total air service market, only very significant increases in economic activity, or significant changes in the type of activity, will result in a large increase in the demand for air service. As a result, significant growth in the air service demand will likely only be attained via an increase in the inbound tourism to the study area.

The interrelationship between access to Jasper and the development of off-season tourism is highlighted in a recent marketing study conducted for the Jasper Marketing Group.[14] Outside of marketing efforts, the development of air service to Jasper/Hinton is identified as a major factor which would facilitate an increase in off-season tourism. Specifically, air service has been identified as a key to developing the following specific markets which have been targeted in the marketing study including:

- Southern Ontario Alpine Ski Market
- California Alpine Ski Market
- Canadian Nordic Ski Market
- Japanese spring and fall golf packages
- Japanese combined business and pleasure trips

Each of these target markets holds significant potential for development, and is relatively travel time sensitive, highlighting the need for improved access to Jasper. For Jasper to be competitive in the non-Alberta domestic and U.S. ski markets, improved transportation access and air service is essential. Likewise, with many of the overseas markets, travel time, and transportation alternatives are important in

14 A Marketing Plan For Jasper In The Off-Season: 1988 - 1991, Stevenson Kellogg Ernst & Whinney. December, 1987.

arranging tours which meet the market's interests and needs. Another area which holds considerable potential for off-season development is conventions. This market has been closed to Jasper in recent years due to a lack of adequate facilities (Jasper Park Lodge and other facilities have been closed during the winter) and poor access. Air service would be a key in providing adequate transportation access for the convention market.

It is suggested that off-season occupancy rates could be raised by 5 percent by 1992 as a result of the implementation of a comprehensive approach to marketing. The introduction of air service would have a further impact in increasing total park visitation in the off-season.

2.6 CONCLUSIONS

The current demand for air service to and from Jasper/Hinton is estimated to be approximately 41,000 inbound and outbound (two-way) trips per year. This is equivalent to approximately 82,000 origin/destination trips per year. The largest single component of this demand is the inbound tourism segment which comprises 96 percent of the total. The remaining traffic segments, outbound tourism and inbound/outbound business, collectively comprise only 4 percent of the total air service market.

The Jasper/Hinton air service market has a broad geographic distribution across both Canada and the United States, and no individual geographic areas dominate the market. Further, the demand for air service is highly seasonal, following the peak visitation of the area during the summer months and relatively low visitation totals during the months from October to April.

The air service market demand estimate is considered conservative for a number of reasons, the major one being the air service demand totals are based on current and historic travel patterns and do not include the potential future growth in the number of visitor trips taken to the area, nor the positive impact air service can have upon developing the tourism market. It has been indicated in a recent marketing study

conducted for the Jasper Marketing Group, that air service could play a significant role in developing off-season tourism to the area. In addition, it is estimated the implementation of a comprehensive marketing plan alone could increase off-season visitation by 5 percent by 1992.

SECTION 3.0
AIR SERVICE ANALYSIS

3.0 AIR SERVICE ANALYSIS

The purpose of this analysis is to assess the feasibility of air service based on the estimated market demand and specific carrier responses to the possibility of serving the Jasper/Hinton market. In addition, constraints to initiating air service at the regional, national and international levels have been explored and are discussed below.

3.1 AIR SERVICE OPTIONS

The evaluation of the feasibility of an air service depends critically upon both the type and level of service being considered. In general terms, two air service options exist for Jasper/Hinton; scheduled service and charter service. As will be discussed below, this distinction is important, as the type of passenger attracted to each type of service has different price and service level expectations.

From the supply perspective, it is also important to consider the types of markets which are generally served by different types of carriers and the demand thresholds which are required for route viability. This depends upon the type of aircraft they use and the structure of their system. To incorporate this aspect into the analysis, it has been conducted separately for regional, national and international air carriers.

3.2 SCHEDULED AIR SERVICE

Scheduled air service is self descriptive in the sense that it is service which is offered on a scheduled basis and which is sold unit by unit (seat by seat), hence the common reference "unit toll" service. It is important to note that, except in very special circumstances, it is the carrier which bears the risk of initiating scheduled service. As is discussed in Section 3.3, this may not be the case with charter service.

3.2.1 Market Factors

As discussed in Section 2.0, the potential Jasper/Hinton air service market is spread over a geographic area which largely encompasses North America and some overseas traffic as well. This lack of concentration of traffic in specific markets influences the possible development of direct or non-stop scheduled air service, and makes such service difficult to support.[1]

Direct Air Service Thresholds

The point to point air market demand by market area is presented in Figure 9. The largest single market area is the Quebec/Atlantic provinces, at approximately 7,200 air passengers per year. These market area demands have been compared to annual air service thresholds for five aircraft types: DC-10, Boeing 737, DASH 7, DASH 8 and Jetstream.[2] All market area demands are significantly below the air service threshold for jet aircraft such as the Boeing 737 and DC 10, which require approximately 26,000 and 56,000 annual passengers annually to justify direct daily service.[3] To put this in perspective, Edmonton to Regina is a marginal market for direct air service and supports only one direct daily flight, and generates approximately 30,000 origin/destination passengers annually. Dash 7 and Dash 8 aircraft breakeven air service thresholds are approximately 11,000 and 8,000 passengers annually, both of which are above the current estimated demand levels to all market areas. The Jetstream has a breakeven air passenger threshold of approximately 4,000 passengers per year. While direct service with the Jetstream would appear to be justifiable in some markets (i.e. Ontario, Quebec and California), it should be noted that this aircraft is designed for a range of up to 1,400 miles.[4] This puts points in Ontario, Quebec and southern California out of its range. In addition, the travel time and comfort level of these aircraft are inferior to larger jet aircraft.

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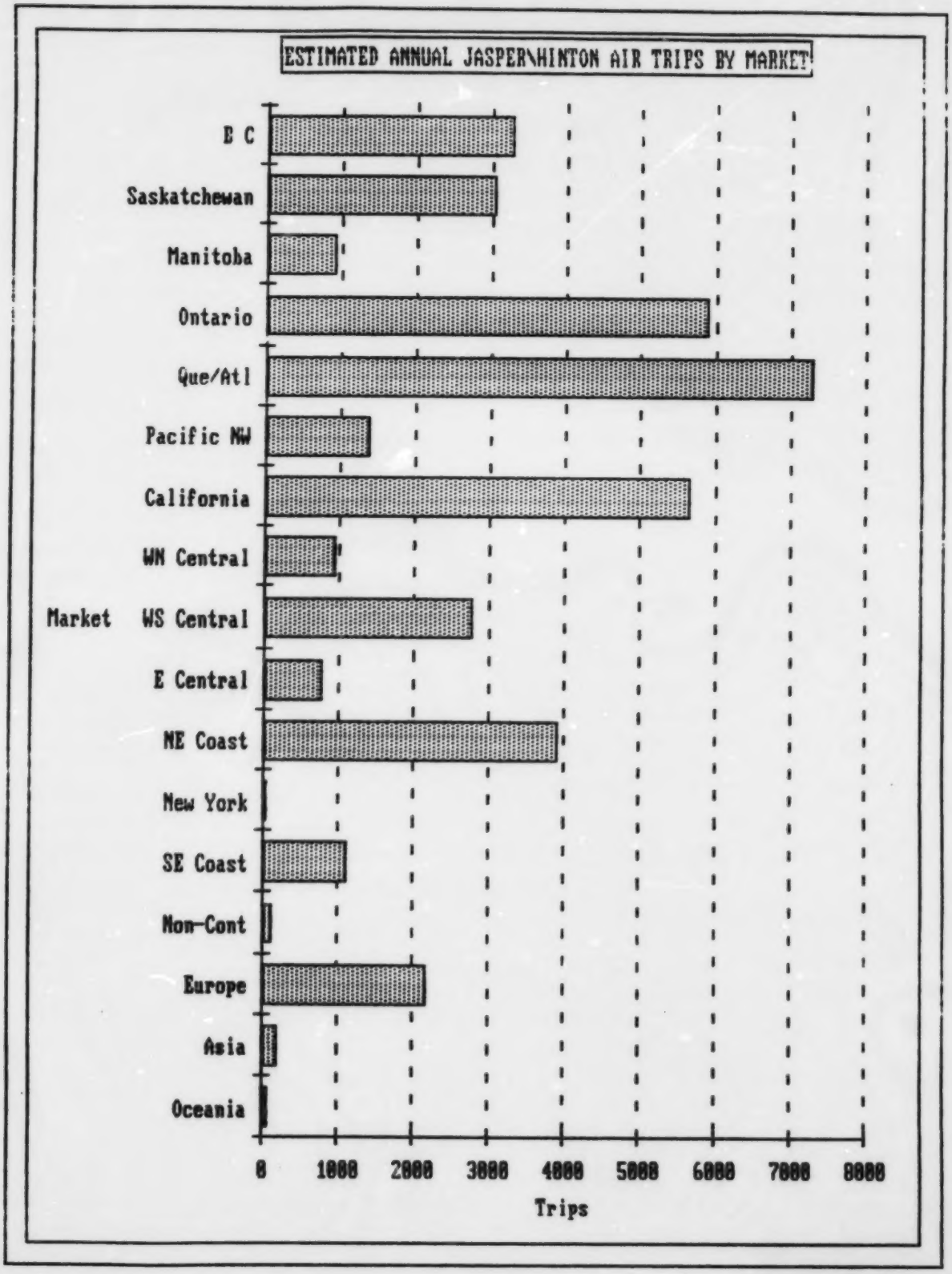
1 Direct air service between two points has one or more intermediate stops, but where through passengers remain on the same aircraft. Non-stop service has no intermediate stops.

2 The volume of annual air passengers required to justify service for each aircraft selected is based on a 60 percent load factor assuming one flight on a daily basis.

3 While seating configurations for aircraft can vary, it has been assumed that the capacity for each aircraft is as follows (based on Official Airline Guide - Aircraft Performance Statistics): DC-10 (255 passengers), Boeing 737 (118 passengers), DASH-7 (52 passengers), DASH-8 (37 passengers), and Jetstream (19 passengers).

4 Source: OAG - Aircraft Performance Statistics

FIGURE 9


ESTIMATED ANNUAL JASPER\HINTON AIR TRIPS BY MARKET
B C
Saskatchewan
Manitoba
Ontario
Que/Atl
Pacific NW
California
WN Central
WS Central
E Central
NE Coast
New York
SE Coast
Non-Cont
Europe
Asia
Oceania
Market
0
1000
2000
3000
4000
5000
6000
7000
8000
Trips

In addition, it should be noted that while a fairly fine breakdown of markets is provided, almost all the markets still encompass several distinct points which contribute to the total. For example, the California market will be split further when disaggregating the total to San Francisco, Los Angeles, San Diego and other points within the state. This further erodes the viability of direct point to point service.

Connecting Service

As a result of the above discussion, it would appear that the most viable option for the current market is a connecting air service. This would involve the consolidation of air passengers arriving from various markets through a single gateway. This option also has the ability to meet some of the regional origin/destination requirements of the business market segment, as well as accommodating the tourism market.

The viability of a connecting air service depends upon several factors. These are summarized below.

- **Selection of a Gateway:** Critical to the success of a connecting service is its ability to attract a significant volume of traffic through a single gateway to enhance ridership. As will be seen, this is an important factor for Jasper/Hinton given the current estimated level of demand for air service.

- **Scheduling:** Another critical factor for a connecting service is its ability to minimize the time between arrival and departure. This requires a scheduling of the connecting flight to match the bank of arrivals and departures so as to maximize convenience and demand.

- **Variability of Demand:** Additional factors which will affect the viability of a connecting service is the variability of demand for flights over the year and during the week.

Connecting Air Service Thresholds

This analysis considers the potential for connecting air service to Jasper/Hinton from either Edmonton or Calgary. It should be noted that Vancouver is also a likely candidate gateway and that there are other routing options which can be considered and which have merit. However, because of the multitude of possibilities, these two were selected for analysis to provide a feeling for the viability of this type of service within the scope of the study.

Currently, of those Jasper/Hinton visitors who fly to Alberta, approximately two-thirds use Edmonton as their air gateway and one-third use Calgary.[5] For the purposes of this analysis, it has been assumed that the tourism and business market segments originating or destined for points outside Alberta, would all be funnelled into a single gateway (either Edmonton or Calgary). Only the Alberta origin/destination traffic (all business) would be sensitive to the gateway chosen.[6]

As discussed in Section 2.0, convenience of the air service will be a primary consideration in its ultimate utilization. For a connecting service, its ability to match schedules with the banks of connecting arrivals and departures is a critical aspect of convenience.[7] For the analysis of Edmonton or Calgary as a potential gateway, the tourism and business market segment (which have origins and destinations beyond Alberta) have been allocated by time of day based on the arrival of flights from their origin or destination of travel. Intra-Alberta business traffic has been allocated on the basis of their stated preferred arrival and departure times.[8]

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5 Sources: 1982 Alberta Travel Survey and Alberta Air Passengers Origin/Destination Data Base (1984, 1985).

6 Specifically, it has been assumed that if air service were initiated between Jasper/Hinton and Calgary, that the Edmonton - Jasper/Hinton origin/destination passengers would not use the air service.

7 Convenience of departure and arrival times for other reasons are considerations as well.

8 For short-haul business trips, it was almost universally desired to have a flight schedule which allows for as much working time during the flight day as possible (i.e. early morning departure and early/late evening arrival).

For each of the Edmonton and Calgary gateway options, passenger arrivals by time of day have been compared to air service thresholds for various aircraft types. Where the air passenger arrivals for one or two consecutive hours exceeds the air service threshold for a particular aircraft type, it can be concluded that service with that aircraft would be viable with a connecting service departure at the end of the relevant time period. Where the number of hourly arrivals or cumulative hourly arrivals are below the threshold, it can be concluded that service would not be viable.

Connecting Service to Edmonton

The bank of connecting flight arrivals in Edmonton by time of day and market are summarized in Figure 10.[9] In general, flight arrivals peak during three periods of the day: 10:00 to 11:00 A.M.; 3:00 to 4:00 P.M.; and 8:00 to 10:00 P.M. Passenger arrivals by time of day have been estimated by equally allocating total passenger trips from each market area over all daily flights (i.e. if two flights, each was assumed to carry one-half of the daily passenger total).

Cumulative daily passenger arrivals in Edmonton at the International Airport are presented in Figure 11. These passenger arrivals have been calculated separately for three time periods reflecting the seasonal nature of the subject traffic. In addition, this figure depicts the aircraft service thresholds for five different aircraft types at a 60 percent load factor.

The daily passenger arrivals for an average month (non-peak, non-valley) clearly indicate that year-round jet service is not practical with the current market. Only during the peak summer months of July and August could service with Boeing 737 equipment be feasible. Turboprop service (DASH-7, DASH-8 or Jetstream) looks much more favorable, with service being feasible at two or three points during the day. However, even using these smaller aircraft, with the level of demand during the offseason (months of November, January and February) it would take almost a full day of arrivals to fill a DASH-7. This clearly illustrates a significant problem with instituting air service to Jasper/Hinton.

9 Source: Official Airline Guide, January and July 1987.

FIGURE 10

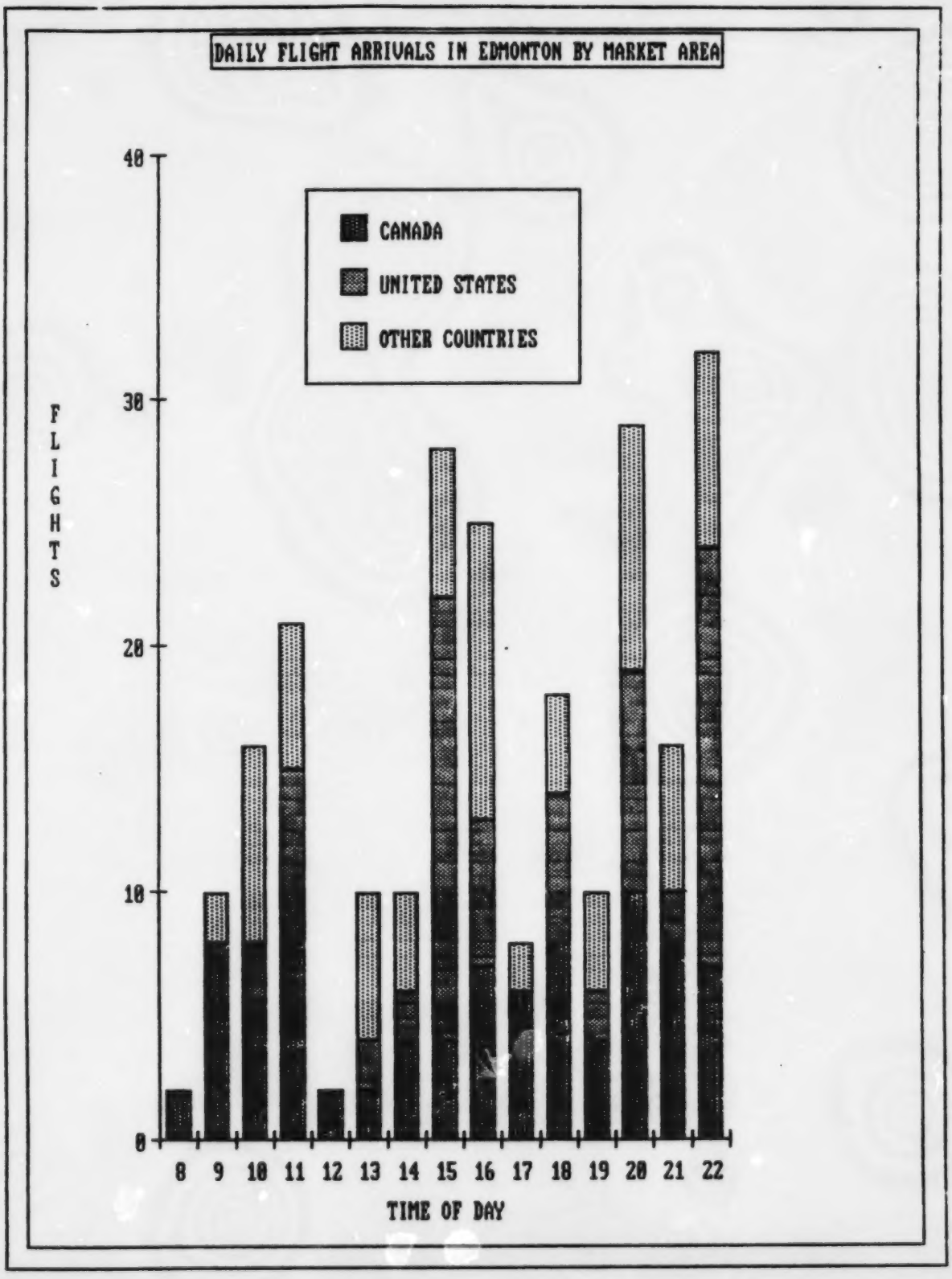
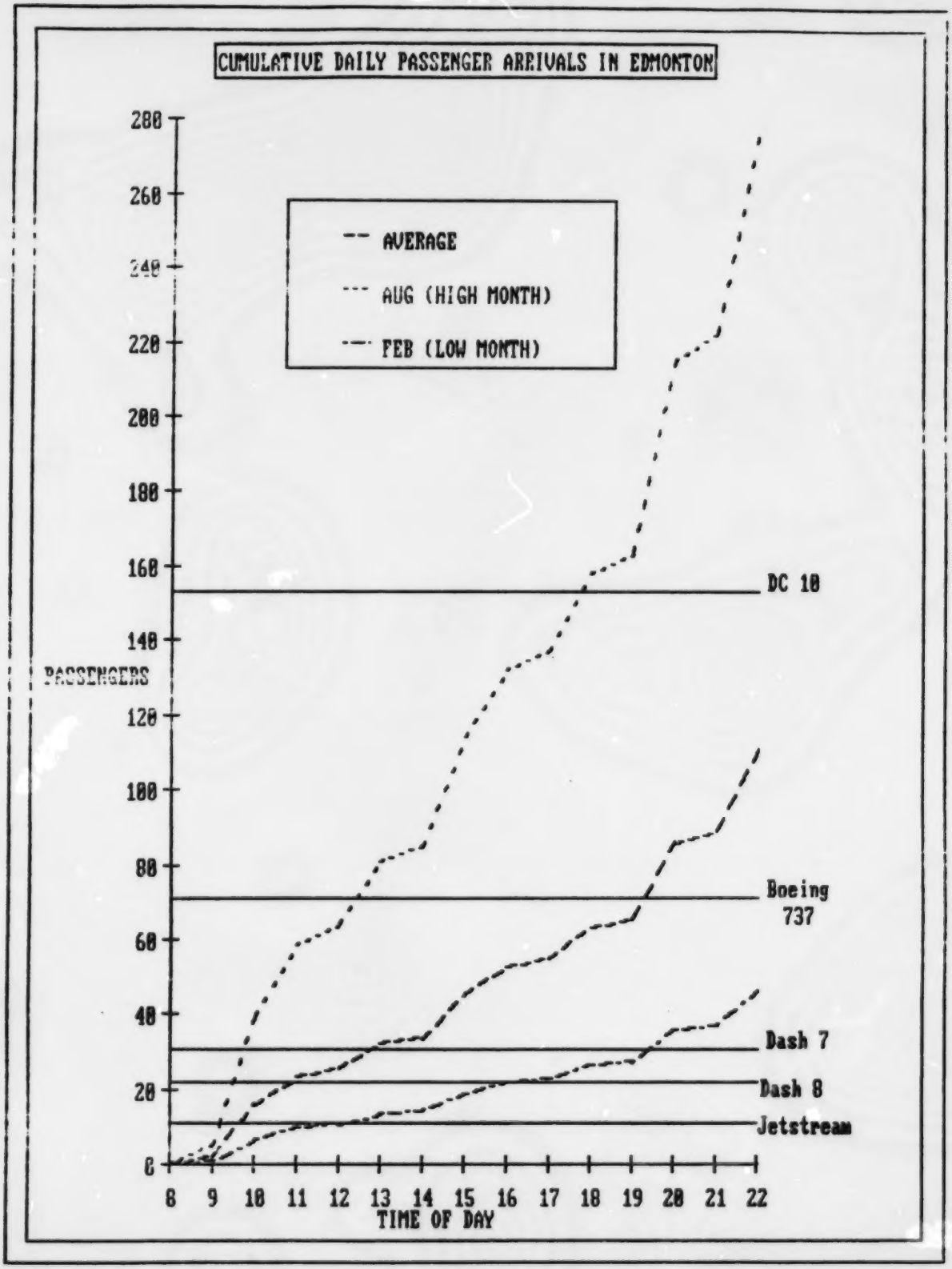

DAILY FLIGHT ARRIVALS IN EDMONTON BY MARKET AREA
CANADA
UNITED STATES
OTHER COUNTRIES
FLIGHTS
40
30
20
10
0
8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
TIME OF DAY

FIGURE 11


CUMULATIVE DAILY PASSENGER ARRIVALS IN EDMONTON
AVERAGE
AUG (HIGH MONTH)
FEB (LOW MONTH)
PASSENGERS
TIME OF DAY
DC 10
Boeing 737
Dash 7
Dash 8
Jetstream
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
6
9
10
11
12
13
14
15
16
17
18
19
20
21
22

Connecting Service to Calgary

As was done for Edmonton, the bank of connecting flight arrivals in Calgary have been determined and are summarized in Figure 12. In general, there is less peaking in Calgary than Edmonton, largely due to more flight arrivals from most destinations and the fact that these arrivals are spread over more of the day.

As with Edmonton, the daily passenger arrivals in Calgary for an average month clearly indicate that jet service is not practical (see Figure 13). Only during the peak summer months are the traffic volumes large enough to justify Boeing 737 service. Also, as was the case with Edmonton, turboprop service would appear to be viable for one or two times during the day. However, again, the lack of traffic during the off-season makes the viability of year-round service questionable.

Other Considerations

It should be noted that it can reasonably be expected that potential connecting air passengers with an interest in taking the connecting air service from Edmonton, Calgary, or whatever air gateway is available, will attempt to schedule their travel plans to make the connection viable. This will have the impact of loading the peaks relevant to the schedule of the connecting service. Thus, the analysis presented here may be conservative to the extent this may occur.

3.2.2 Regional Carriers

Regional air carriers in Canada have historically provided origin/destination service to small centres not served by national carriers. In addition, the recent trend towards deregulation of the Canadian air industry has resulted in a more structured alignment of the regional carriers with specific national carriers, thus increasing their role in providing feeder service to the national carriers.

FIGURE 12

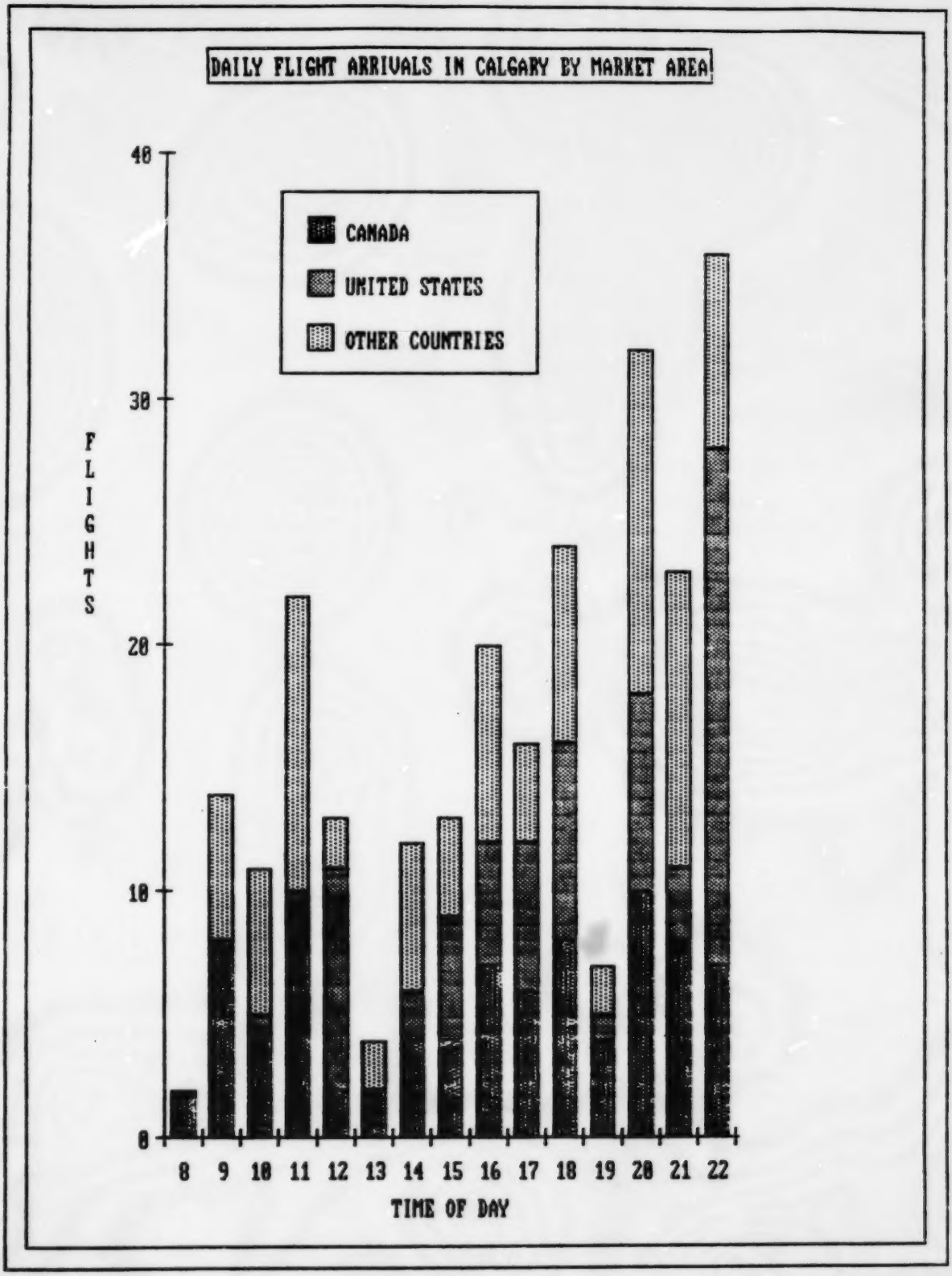
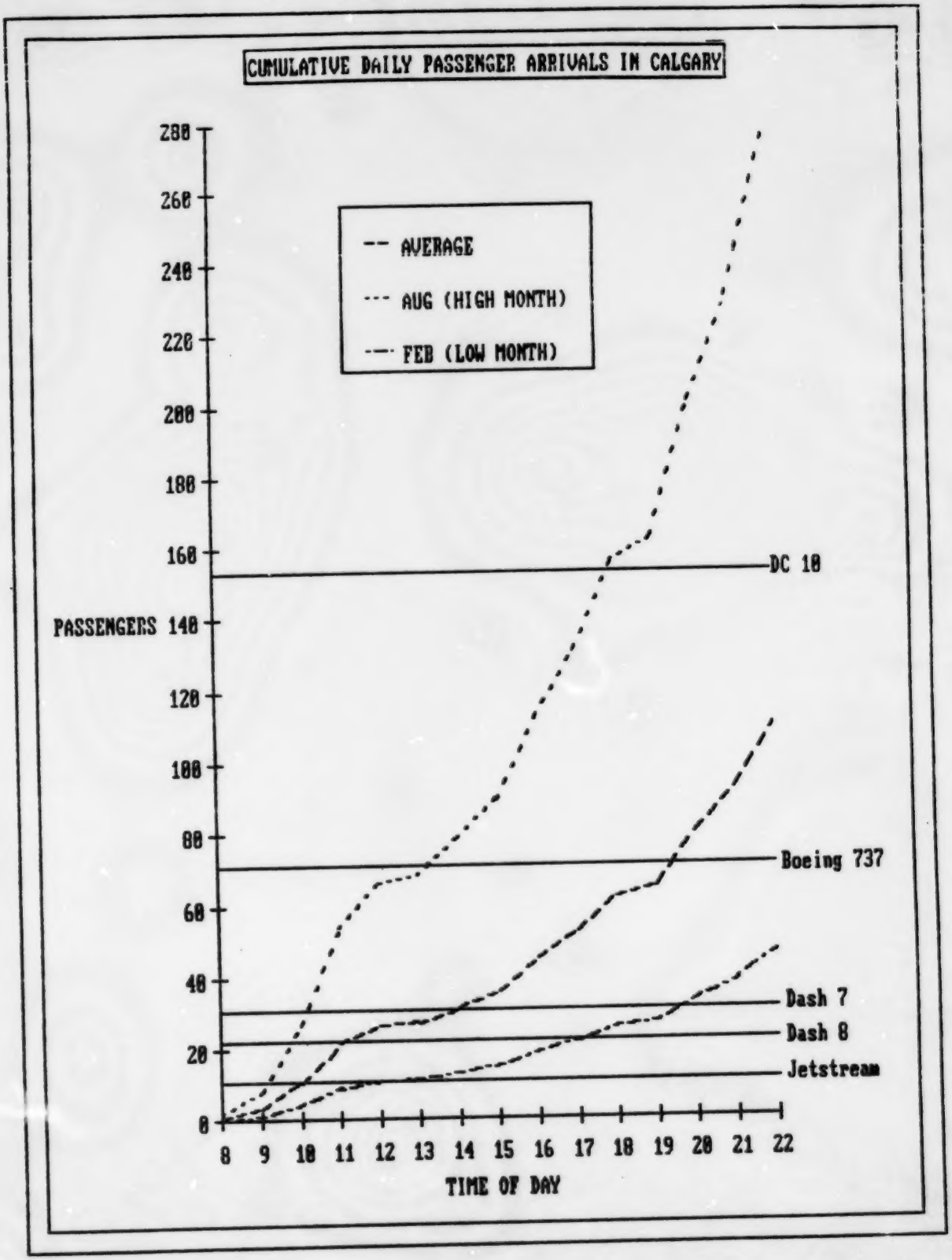

DAILY FLIGHT ARRIVALS IN CALGARY BY MARKET AREA
CANADA
UNITED STATES
OTHER COUNTRIES
FLIGHTS
40
30
20
10
0
8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
TIME OF DAY

FIGURE 13


CUMULATIVE DAILY PASSENGER ARRIVALS IN CALGARY
AVERAGE
AUG (HIGH MONTH)
FEB (LOW MONTH)
PASSENGERS
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
DC 10
Boeing 737
Dash 7
Dash 8
Jetstream
8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
TIME OF DAY

The two major regional air carriers serving Western Canada, Time Air and Air B.C., were approached regarding the question of air service to Jasper/Hinton. A discussion of relevant issues and constraints involved is provided below.

- **Carrier Interest:** Both carriers have expressed an interest in the possibility of serving Jasper/Hinton. The airlines have to a varying extent analyzed the potential of the Jasper/Hinton market and are interested in exploring its possibilities further. It was also clearly pointed out that both carriers currently face significant constraints with respect to equipment availability and existing service commitments. In addition, both carriers have concerns regarding the market development required to make Jasper/Hinton a viable destination. These constraints are discussed in more detail below. As a result, the initiation of air service to Jasper/Hinton is not a priority with either carrier under current circumstances, and could not be considered for at least one or two years.

- **Type of Service:** Both carriers would be looking primarily at providing connecting service for the tourism market segment. As discussed previously, this is most of the current air market and it is also the market segment with the most potential to grow. The business market is seen as important because it provides some seasonal market stability and higher fares.

- **Routing:** The three potential gateways for service to Jasper/Hinton are Edmonton, Calgary and Vancouver. Edmonton and Calgary are seen as the most likely initial points to which service could be initiated given that these centres are closer to Jasper/Hinton and are currently handling most of this region's air traffic now. Vancouver would likely be a longer range alternative for service with the possibility of a through routing to Edmonton. It is also possible that other intermediate stops between Vancouver and Edmonton or Calgary would be added (i.e. Prince George). This type of through service would provide a greater flexibility in serving the Jasper/Hinton traffic, and it may help alleviate the burden of relying on only destination traffic to justify the route.

- **Airport Infrastructure:** Both airlines indicated that the current runway and terminal building facilities were adequate to meet the requirements of the aircraft in their fleets.

- **Support Services:** Aircraft and passenger support services would be required to successfully implement scheduled operations. This would include the installation of adequate aircraft fueling and maintenance facilities, as well as passenger services such as ground transportation services (shuttle bus, rental car, taxi services) and possibly other passenger support services. These types of services and facilities would be provided by private interests.

- **Market Development:** Both airlines saw no problem with demand levels during the peak summer months but had considerable reservations regarding the demand for air service during the off-season. As demonstrated in the Air Service Threshold analysis discussed above, the primary air service market (inbound tourism) shrinks to approximately 15 percent of its peak levels. This severely limits the viability of air service during the off-peak period. Thus, a critical concern of the carriers is to what extent this offseason market can be stimulated and how quickly this can be done. It should be noted that both carriers have been faced with pressure to expand their service. Thus, the questions of equipment availability, route profitability and risk are relevant to Jasper/Hinton and the other service options the airlines are considering.

- **Equipment Availability:** The recent expansionary pressures faced by the regional carriers has resulted in additional equipment requirements. Due to the slow delivery of ordered aircraft, delays have been experienced in implementing planned service expansions. This environment makes it more difficult and risky for airlines to expand into new markets which may be perceived as marginal.

- **Risk:** In the case of scheduled air service, the carriers generally bear both the financial and corporate risks of initiating service. Thus, from the carriers' standpoint, factors which minimize risk make the step toward the provision of new or expanded services more attractive. In addition, it should be recognized that the decision regarding one market is not made in isolation, but rather is evaluated against the other options the carrier has with respect to service enhancements across its system. In addition, route expansions have a relatively short period of time to demonstrate profitability. Given the increased competition within the airline industry, carriers cannot afford to get into a situation which requires the development of a market over a long period of time. This highlights the importance of the Jasper/Hinton offseason market development question discussed above.

- **Seasonal Service:** A solution to the carriers concerns regarding the risk of developing an offseason air market is the initiation of seasonal service where the summer demands appear to be more than sufficient to maintain service. This option would also lay the groundwork for the possible development of offseason viability by demonstrating a market exists for air service to Jasper/Hinton and creating a market awareness that air service is a viable transportation alternative. Carrier response to this option was negative, largely for a single reason. The summer months during which seasonal service would be viable to Jasper/Hinton coincides with the carriers' busiest time of the year, during which the problem of equipment availability is most acute. Thus, they would not be willing to allocate some of this existing fleet to a new market. As well, it is not viable for the carriers to purchase additional equipment for the seasonal service of a new market, and have the aircraft sit idle for 6 to 8 months of the year. If the demand for Jasper/Hinton air service peaked in the winter months, when carriers do have excess capacity in their system, they would be willing to consider seasonal service.

In summary, the regional carriers are interested in the Jasper/Hinton market, and believe the existing and potential air market could justify connecting air service. The risks of initiating the service in the near term (one or two years) appear to outweigh the potential benefits.

3.2.3 National Carriers

National carriers generally provide point to point service between major Canadian centres. The consolidation of Pacific Western Airlines (PWA) and CP Air into Canadian Airlines International Ltd. (CAIL) has meant that CAIL has some elements of a regional carrier with some of the routes previously serviced by PWA. However, it is generally understood that CAIL is moving towards primarily offering service to major centres nationally and abroad, and that some of its inherited regional system will be served by regional carriers in the future.

Both Air Canada and CAIL were approached regarding the potential for serving Jasper/Hinton, and their perspective on the relevant issues is summarized below.

- **Carrier Interest:** Neither Air Canada nor CAIL have an expressed interest in serving Jasper/Hinton at this time. The size of the market and the estimated demand for air service are significantly below that which would be required to attain national carrier service. For example, the smallest centre in western Canada currently served by Air Canada is Regina, which has a population of approximately 150,000 and generates over 400,000 origin/destination passengers annually.

- **Airport Infrastructure:** The equipment utilized by Air Canada and CAIL would require significant enhancements to the Jasper/Hinton airport. This would involve the extension of the runway, enhancement of the air terminal building and the provision of other groundside passenger related improvements (see Section 4.2.5).

- **Support Services:** In addition to airport infrastructure, the development of aircraft and passenger support services would be required. These services would be in addition to those which would be required for regional service to handle the different type of aircraft and the greater volume and diversity of passengers.

- **Market Development:** While Air Canada and CAIL do not see Jasper/Hinton as a viable market now, nor in the near future, this does not preclude the possibility of national carrier service at some point. The primary prerequisites to national carrier service are, firstly, the development of a successful regional carrier service and, secondly, the development of an air service market which exceeds the ability of a regional carrier being able to efficiently serve it. This second prerequisite has two distinct aspects. The first is the total size of the market, for which at some point service by larger aircraft is required to accommodate demand. The total market size can be quite large before national carriers with jet service are required. An example is the Denver to Aspen market, which has approximately 200,000 users of air service per year, yet has only turboprop service. The second factor involves the type of service required. As discussed above, national carriers predominantly serve point to point or origin/destination markets which can support the desired frequency with larger aircraft (i.e. Boeing 737 and larger). In lower volume markets where frequency is equally important, more flights with smaller aircraft better meet the needs of the market and enhance the viability of the service. Again, the Denver to Aspen market is an example relevant to the Jasper/Hinton situation, where most air passengers are making a connection, for which a high level of frequency can better meet their air service needs. Hence, the two carriers serving Denver - Aspen offer 15 flights per day.

In summary, service by national carriers in the near term is unrealistic. The long term development of national carrier service will depend upon the development of viable regional carrier service and the development of high traffic volumes from specific markets which reach the threshold required to make direct air service to that market viable.

3.2.4 International Carriers

International carriers provide service to points across national boundaries. This service is usually provided by carriers of national carrier status. Jasper/Hinton was discussed in this context with Northwest Orient (NWO) and Japan Airline Ltd. (JAL). Air Canada and CAIL are also international carriers for most of the markets relevant to Jasper/Hinton.

As international carriers provide the same type of service as national carriers and generally operate the same types of equipment, many of the national carrier issues and concerns are relevant to the international carriers. As these common issues have been dealt with in detail in the previous section, they are only briefly discussed below.

- **Carrier Interest:** As the case with the national carriers, the Jasper/Hinton market requires substantial development before international scheduled service can be considered.

- **Airport Infrastructure:** The same types of airport development would be required for international carrier service as that required by the national carriers. In addition to this, customs facilities may also be required in the case of direct and non-stop service abroad.

- **Support Services:** Similar types of aircraft and passenger support services would be required for international service as would be required for national carrier service.

- **Customs Services:** For direct and non-stop international and transborder services, it would be necessary to provide customs officers and customs facilities at Jasper/Hinton. This would be an extremely expensive operation if the number of international flights was small. As a result, direct international service would be discouraged in favor of an intermediate stop at an airport with customs services (i.e. Edmonton, Calgary, Vancouver).

This would entail passengers destined for Jasper/Hinton to deplane, pick-up their bags, clear customs and reboard the plane on-route. As deplaning is required, this would force passengers to essentially make an intermediate connection, negating the advantage of direct or non-stop service.

- **Landing Rights:** This would be a difficult area involving complex international negotiations. At best, this would be considered a longer term possibility.

- **Market Development:** The discussion of market development for national carriers is relevant to international carriers.

In summary, like national carriers, scheduled service to Jasper/Hinton from international points in the near term is unrealistic. In addition to the market development requirements to justify direct international service, issues regarding customs clearance and landing rights will make this service more difficult to initiate.

3.3 CHARTER SERVICE

Charter service almost always involves direct point to point air service. It differs from scheduled service in that it is not normally run on a continuous basis. In addition, the risk of developing charter service is usually borne by the tour operator/wholesaler who has arranged for the aircraft and is responsible for selling the service.

Charter service can play an important role in serving markets for which there is a short term or seasonal demand for service which cannot be met by scheduled carrier service. In addition, charters are important in developing markets that are vacation/recreation oriented, as they are generally able to achieve higher load factors which, from the carrier's perspective, offset the lower fares which must be offered to the relatively price sensitive vacation/recreation traveller.

3.3.1 Market Considerations

Two features of charter service make its application to Jasper/Hinton attractive. First, it can be provided on an as-needed basis, so that when the demand exists (i.e. summer months), it can take advantage of the seasonal market offered by Jasper/Hinton. Second, it caters primarily to the vacation/recreation market, of which the Jasper/Hinton air market is largely comprised.

The other primary feature of charter service, that being it is generally point to point service, does not enhance its application to Jasper/Hinton. As discussed above, the Jasper/Hinton air service market is spread across a wide geographic area and, as a result, charter service to Jasper/Hinton suffers from the same problem as direct scheduled service. However, as charter service can be offered on an "as demand justifies it" basis, this problem is not as acute for charter service.

It should be noted that Jasper/Hinton is not the only market for which the potential for entity charter service has been underdeveloped. Charter service to points within Canada from both Canadian and international points is significantly behind the development of charter service originating in Canada destined to points abroad.

3.3.2 Entity Charters

Entity charter service is the term used to describe air charters where the entire aircraft is paid for by a single group, and that group has a common purpose (i.e. tour, convention). While this can involve larger, jet aircraft with capabilities of 100 passengers or more, it is usually the case that smaller, turboprop aircraft of less than 60 seats are used.

Given the scale of aircraft usually employed for entity charters, there are no physical, airport infrastructure related impediments to this type of service being instituted to Jasper/Hinton. In fact, since the runway expansion and completion of the current air terminal building in 1978, the Jasper/Hinton airport has been capable of accommodating DASH 7 and 8 and other commuter type aircraft which can be used for entity charters.

The fact that entity charters have not been extensively developed into Jasper/Hinton must be evidence that market demand considerations have precluded the service. Based on discussions with four operators who sell Jasper/Hinton in markets outside Alberta, the following factors have played a part in the lack of this type of service to Jasper/Hinton.

- o The direct air markets being too thin to support the service.
- o The development of the service being perceived as too risky by potential operators.
- o A lack of coordinated market development aimed specifically at this market.
- o A lack of awareness of the entity charter option and its applicability to the Jasper/Hinton market.

3.3.3 Other Types of Charters

Other types of charters such as advance booking charters (ABC), common purpose charters (CPC) and inclusive tour charters (ITC), involve the sale of the aircraft's capacity to more than one distinct group where passengers make a direct financial contribution for the service, and generally involves the utilization of larger aircraft. As a result, this type of charter service usually requires larger point to point markets than charter service which utilizes smaller aircraft. It should also be noted that when larger aircraft are involved in a charter operation, the cost of the equipment increases and its availability can decrease. Thus, while entity charter operations can be organized such that the aircraft may follow the passengers (i.e. air crew and aircraft stay over at the destination until the charter heads back to point of origin), in the case of larger aircraft, this is often too costly. As a result, the aircraft would be positioned for alternative uses by its owner (usually an air carrier and usually for scheduled air service). This can result in the charter operator having to pay for "dead-heading" the aircraft to and from the charter destination.

A common solution to "dead heading" is the institution of a charter program, so that different groups are brought in and out of a destination over a season on a regular basis. This has the affect of spreading the cost of dead-heading over a larger group of users. It also has the requirement of a larger market base to make the operation viable. As discussed above, this is something that requires development in the case of Jasper/Hinton.

3.4 CONCLUSIONS

An analysis of the air service options for Jasper/Hinton indicates that direct air service on a scheduled basis from current markets is not practical, even for smaller turbo-prop aircraft. Considerable development of these markets, as well as a broadening of their scope across all seasons is required before direct air service is a viable option.

Connecting air service using Edmonton or Calgary as a gateway was evaluated, and passenger volumes and potential arrival patterns suggest that Boeing 737 service could be supported during the periods of peak park visitation (July and August). Air service thresholds for smaller turbo-prop aircraft (i.e. DASH 7 and DASH 8) were viable for an average month, however, the variability of traffic volumes over the year, and specifically the lack of traffic in the off-season (October to April) makes the viability of year-round service questionable at this time.

The two major regional carriers in Western Canada, Time Air and Air B.C., have an expressed interest in serving Jasper/Hinton, however, due to the lack of available equipment, the thin off-season market, and perceived risk of initiating service, neither carrier is considering Jasper/Hinton a priority development target in the very near term. The national and international carriers approached indicated that direct service to Jasper/Hinton is not viable for several reasons, the most important being the relatively small size of the total air service market, as well its lack of concentration by geographic area, and its highly seasonal nature. Other factors such as the infrastructure required to accommodate and service the aircraft flown by

these carriers were of secondary importance. It was indicated that if the market were sufficient to justify the service, the infrastructure constraints could likely be overcome relatively easily.

Finally, charter service to Jasper/Hinton is attractive as it is accessible to the vacation/recreation traveller, which constitutes the majority of the Jasper/Hinton air service market. Further, the current airport infrastructure is largely in place to handle charter service with smaller aircraft. A major reason that charter service has not been introduced on a regular basis, is the relatively small concentration of potential travellers from specific market areas. Thus, the development of charter service shares the same problem of a diverse market base with the development of direct scheduled air service.

SECTION 4.0
AIR SERVICE DEVELOPMENT STRATEGY

4.0 AIR SERVICE DEVELOPMENT STRATEGY

The purpose of this analysis is to present a logical approach to the development of air service from the present situation through to the initiation of air service and ultimately to the development of direct air service to specific markets by jet aircraft. As discussed in Section 3.0, the development of national and international direct scheduled and charter service is not viable in the short run. In addition, the attainment of this level of service is only possible as a result of a step by step development of the Jasper/Hinton air service market. Thus, while the development strategy proposed here looks well into the future, it must be recognized that the long run goals are only achievable if the short run, and perhaps less ambitious milestones, can be achieved. As a result, this discussion concentrates on short-run hurdles which must be overcome to bring the long term goals into reach.

The discussion of the proposed air service development strategy is presented in three parts. First, an overview of the strategy which outlines a building block approach to air service development is provided. Second, distinct steps or milestones have been identified which represent significant achievements which should be attained prior to the development of direct jet air service to Jasper/Hinton. The final section presents strategic options which may be implemented to facilitate a timely achievement of the previously identified milestones.

4.1 STRATEGY OVERVIEW

As discussed in Section 3.0, carriers (and in the case of charter service, tour operators and wholesalers) must bear the risks of initiating service to Jasper/Hinton. In general, when a higher level of service is considered, the greater the risk that is involved for the carrier. Thus, the strategy outlined below is set out so as to minimize these risks. This is largely achieved through a step by step or building block approach whereby subsequently higher levels of service are instituted as the demand increases to the point sufficient to justify the enhancement.

It is obvious from this approach that the long run desire for national and international scheduled and charter air service can only be achieved by first attaining some kind of air service, and developing the current air service market to the point where subsequent levels of air service can be justified. As a result, the primary focus of this strategy is on those factors which will bring a basic level of air service to Jasper/Hinton, which can be developed into the level of service which is ultimately envisioned for the area.

4.2 AIR SERVICE DEVELOPMENT

Discussed below are the distinct steps or milestones through which air service can be expected to progress. Each of the milestones identified embodies a distinct level of service which represents an improvement from the previous milestone. As a result, each milestone can be considered a pre-requisite to achieving the next level of air service. These milestones have no specific timetable and would be achieved only when demand was sufficient to justify the service and no supply constraints existed which would inhibit the service being provided of that level.

Each milestone presented below is described in terms of the type of air service involved, aircraft which would be utilized, and the kinds of markets served. Also presented is an overview of the requirements, in terms of the changes in the air market and airport infrastructure, necessary to achieve the milestone.

4.2.1 Status Quo

Currently, Jasper/Hinton has no scheduled air service and virtually no group air charter service.[1] As discussed in Section 1.0, the airport runway can accommodate short and medium range turboprop aircraft and the existing terminal building can accommodate the passengers carried on these aircraft.

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1 Charter service is utilized to the Jasper/Hinton airport but mostly for business purposes. Group charters to Jasper/Hinton have been run to Jasper/Hinton on only rare occasions for special purposes.

Requirements

Maintenance of the status quo requires no action.

4.2.2 STEP 1: Scheduled Ground Transport Link

An intermediate step to air service is the establishment of integrated scheduled ground service from an air gateway, either the Edmonton or Calgary International Airports, to Jasper/Hinton. The service would be direct from the airport, allowing air passengers to connect with the bus service, which would take them directly to Jasper or Hinton. The success of this type of service would be extremely important in demonstrating to an air carrier that the connecting air market exists and can be viable. Further, if this type of service were successful in stimulating the off-season tourism market, it would significantly reduce the market development risks currently perceived by the air carriers.

Requirements

Public ground transportation is currently provided from Edmonton and Calgary on both a scheduled and charter basis. In addition, scheduled service from the Calgary International Airport to Jasper is provided by Brewster Transportation & Tours on a daily basis during the summer and a weekly basis during the winter (ski season) months. This service makes two stops between Calgary and Jasper, at Banff and Lake Louise, and takes seven and a half hours from point to point. In addition, the service cannot be booked in advance. While this operation demonstrates that a limited demand for connecting service exists, it could be enhanced by further integrating it into the marketing network (i.e. computer reservations and system advance booking) and air service operating system (i.e. through ticketing and baggage services). Further, this type of service may be more amenable to Edmonton, given the greater number of Jasper/Hinton visitors using the Edmonton gateway, versus Calgary, and the relatively shorter distance to Jasper from Edmonton.

The introduction and integration of scheduled bus service to Jasper/Hinton will have to overcome some of the same problems that a connecting air service faces. These include scheduling considerations (service which best matches the flight banks of arriving and departing flights) and the seasonal nature of demand. These problems however, exist on a smaller scale for bus transportation because of its lower cost of operation, and the resulting lower level of financial risk to the operator. In addition, the current weakness in the demand for inter-city public ground transportation means that excess capacity exists in the system and expansion to new markets may be viewed positively on either a seasonal or year-round basis.

4.2.3 STEP 2: Regional Air Service

It is envisioned that regional air service on a scheduled basis, either year-round or seasonally, will be the most pragmatic, inaugural step to air service for the study area. This will provide a base level of air activity to and from Jasper/Hinton, and also result in the establishment of related support services which can subsequently be used by air charter operators.[2]

The regional service should take advantage of the existing air market and cater to the connecting air passenger market which is primarily tourism related. The service would likely involve daily service to either Edmonton or Calgary using DASH 7 or DASH 8 type aircraft. As discussed above, this would not require any additional public investment in the air infrastructure in Jasper/Hinton.

It could also be argued that entity charter service or group charter service with turboprop aircraft will do the same to establish an air market to Jasper/Hinton that a scheduled ground transportation link would provide. It is likely, however, that charter service would be offered initially only during the peak season, thus entrenching the perception of Jasper/Hinton being a seasonal market. If charter air service was successfully offered during the winter, however, the opposite would be true. It should be noted that, as discussed above, since 1978, there have been no infrastructure or operational impediments to this kind of service being offered.

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2 These services would include permanent aircraft fueling and maintenance facilities as well as air passenger related support services.

Requirements

Success of regional connecting air service will require some development of the off-season air market to make year-round service viable. This may involve the operation of the air service at a loss over a period of several years until demand can be stimulated to the extent necessary to achieve load factors which can sustain the service. In addition, successful marketing of off-season tourism or demonstrations that off-season air traffic can be stimulated (i.e. scheduled bus service) would help alleviate the perceived risk of the Jasper/Hinton market to air carriers.

4.2.4 STEP 3: Enhanced Regional Air Service

Enhanced regional air service would involve an expansion of the basic connecting regional air service by additions of frequency (more flights to the same air gateway), destinations (same airline serving more than one air gateway) or carriers (more than one carrier serving Jasper/Hinton). In addition, the development of entity group charters could also be included in this milestone. Each of these service enhancements would still cater primarily to the connecting air service market. In addition, they would involve the use of turboprop aircraft and thus would require no expansion of the air infrastructure in Jasper/Hinton.

Requirements

The year-round viability of basic regional air service is obviously a prerequisite to enhanced service. The enhanced regional service milestone can be considered a continuum over which successive increases in the demand for air service can be met by successive incremental enhancements of air service. While it may be expected that the initiation of air service is the most difficult barrier to be overcome, and that further enhancements will proceed as a matter of course, both the maintenance of that market and its continued development may require substantial coordination of both marketing and transportation initiatives.

4.2.5 STEP 4: Direct Market Air Service

Direct market air service refers to the establishment of air service to markets which are not connecting air service gateways, but which are the actual origin or destination of Jasper/Hinton air passengers. This would encompass service by possibly regional, national and international carriers as well as charter service which would utilize jet aircraft. As the service may involve larger jet aircraft, expansion of the Jasper/Hinton Airport airside and groundside facilities would be required. This would involve the extension of the existing runway to at least 10,000 feet and the development of a 650 square metre air terminal building (see Section 4.3.4).[3]

Requirements

Direct market air service is a significant progression from connecting air service and would require a substantial increase in air passenger flows. As direct air service is route specific, the concentration of development in specific markets which pushes the market demand to the minimum air service threshold is required. As discussed in Section 3.0, this requires the significant development of almost all Jasper/Hinton's current potential air markets.

4.3 STRATEGIC OPTIONS

Historically, air service development in Canada has been regulated by the Federal Government. Other than granting routes or requiring carriers to serve routes, government and community involvement has been limited to ensuring that the appropriate level of airport infrastructure was provided. The current situation is quite different as routing and scheduling decisions lie almost entirely in the hands of carriers. The role of governments and communities has also changed from the use of strict regulatory tools, to the possible use of incentives to entice carriers in the direction seen to maximize economic and social benefits. Largely however, governments have been relatively neutral in the airline industry in this regard since

3 This would be equivalent to a Systemized Terminal Expansion Program (S.T.E.P. AK-62-08-000) 4.0 terminal building with a peak hour passenger capacity of 100 passengers.

the loosening of regulatory controls. In the United States, where air deregulation has a longer history, we have also seen examples of where communities have taken the initiative in the development of enhanced transportation services and the initiation of local air service.

In this section, four specific strategic options are presented which reflect an approach to overcoming some of the specific barriers to the development of air service to Jasper/Hinton. These options are based on extensions of strategies which have been enacted in response to situations similar to that of Jasper/Hinton. In addition, each option discusses the implementation process and who the major players would be.

4.3.1 OPTION 1: Connecting Ground Services

As discussed above, an intermediate step between the status quo and the introduction of regional air service to Jasper/Hinton would be the development of an integrated ground transportation link between a gateway airport (Edmonton or Calgary) and Jasper/Hinton. While the introduction of this service and its ultimate success may require more than a minimal level of effort, its potential can be enhanced by increasing the awareness of the service and making it easier to sell.

The Jasper/Hinton tourism market is worldwide and, as a result, the awareness of transportation options for Jasper/Hinton on the part of travel agents and tour operators can vary significantly. Increasingly, travel agents are relying upon Computer Reservation Systems (CRS) to book most travel. These services are primarily provided by airlines and are thus oriented towards air travel. In most cases, if a community does not have air service (i.e. Jasper/Hinton), it will not be listed on the CRS. To address this problem, one option would be to have an airport designator code assigned to Jasper/Hinton and to have the connecting bus service listed on computerized reservation systems and databases.[4,5]

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4 In Canada, Air Canada and Canadian Airlines are now in the process of establishing a single joint-use reservation system.

5 The connecting services listed do not have to be restricted to airline service, but could also include VIA Rail and scheduled bus services.

A precedent for this option is the service provided by America West Airlines to Scottsdale, Arizona, which is a suburb of Phoenix. America West operates a scheduled bus service referred to as the "America West Careliner", between Scottsdale and the Phoenix Skyharbour Airport, and the airline treats that service as a scheduled air flight. The Scottsdale terminal for this service is located in a major hotel lobby, and dedicated arrival and departure gates are operated by America West Airlines at the Skyharbour Airport. While the service was originally intended to serve only America West connecting passengers, the airline has indicated that it accepts passengers of other airlines for a fee. As a result of this arrangement, passengers travelling to Scottsdale from points beyond Phoenix can make reservations on the CRS's of most airlines, be ticketed through to their destination, and have their baggage transferred automatically.

Implementation

A prerequisite to the attainment of a designator code and CRS connection listings is the institution of the service. This will involve discussions with ground carriers and airlines, requiring an integrated operating agreement. The communities or a representative regional group could take the initiative in developing the necessary dialogue.

4.3.2 OPTION 2: Risk Sharing of Air Service Development

As discussed in Section 3.0, a significant concern of carriers in initiating air service to Jasper/Hinton is the risk involved, specifically with respect to the development of the off-season air market. In the United States, several communities faced with a similar problem of air service development have entered into an agreement with an air carrier, which provides service to the community in return for a financial guarantee, thus eliminating the carrier's risk of providing the service. Specifically, this program has been initiated separately by three Rocky Mountain ski resorts: Jackson Hole, Wyoming; Steamboat Springs, Colorado; and Crested Butte, Colorado; all in conjunction with American Airlines. Previous to this program, these communities were unable to attract scheduled air service largely because of the seasonal nature and the price sensitivity of their tourist market.

These programs with American Airlines have been between two and four years in length. Under the terms of the agreement, the community posts a letter of credit which can be drawn on by the airline in the case of an operating deficit. In the event of a surplus, the agreement calls for the airline to return the surplus to a pool to fund any past or future deficits. Deficits and surpluses are defined in relation to the contracted cost agreed to by the airline and the community, with the agreement including a profit for the airline as part of the contracted cost.

Based on the financial terms outlined in these agreements, the service can in many ways be considered a charter service which is operated by the airline on behalf of the communities or resorts. In these examples, the agreement exposes the community to the risk of instituting the service. In return, the community receives scheduled air service and its associated direct and spin-off benefits (i.e. incremental tourist visits) that they otherwise would not have attained. The airline bears little or no financial risk, as the community absorbs any losses or receives any surplus. The major difference between this and a charter program is that the service is integrated into the airline's route and reservation system as a regularly scheduled service.

A refinement of this option would be a sharing of the risk of route development, rather than a strict transfer of risk from the airlines to the community group. This would involve the community being responsible for only a portion of the operating deficit on the route, with the airline picking up the rest. Likewise, any profits generated by route would fairly be distributed to both the community and the airline on a basis commensurate with the risk of losses. This would have the effect of reducing, but not eliminating the air carrier's risk of route development.

Implementation

It must be recognized that the implementation of this option would be relatively complex for two reasons. First, it requires an agreement between the participating airline and the local business community. Second, the agreement must be wide ranging in scope, covering not only the cost of service, but how the surplus or deficit is distributed among the various players.

As the benefits of air service will be spread across a wide range of businesses in the community, it is important that a broad base of community support for the program be attained. The active financial participation of all community businesses which will benefit from the program will eliminate the possibility that some portion of the community is cross-subsidizing another portion. It must be recognized that it will be extremely difficult to entice all those who will potentially benefit into such a program. In addition, negotiation of the formula by which an individual enterprise's contribution is determined must be seen as roughly equivalent to the potential benefits which may accrue. This is also a very difficult arrangement to negotiate in practical terms.

Finally, while the airline does not bear all the financial risk, it does have an important role to play in the success of the service. Access to a strong hub with good feeder system is crucial if high load factors are to be achieved. Effective seat and fare management is also important if operating revenues are to be maximized.

4.3.3 OPTION 3: Off-Season Market Development

While this option is not necessarily directly related to enhancement of the transportation services to Jasper/Hinton, it can play a significant role in the viability of air service to the area. As a major concern of the air carriers in initiating service to Jasper/Hinton is the lack of area visitation in the off-season, further development of this market will increase the attractiveness of a Jasper/Hinton air service operation.

Implementation

Off-season market development may be approached from several perspectives. It may be tied to the transportation options, to the area, or it may be solely a marketing effort. It can be conducted by individual businesses in the area, by the community collectively, or in conjunction with provincial government tourism initiatives. It is beyond the scope of this study to investigate the marketing

alternatives available for the Jasper/Hinton area, and the relative merits of each approach. The marketing study currently being conducted for the Jasper business groups is however, a positive first step in the implementation of this option.[6]

4.3.4 OPTION 4: Airport Infrastructure

As discussed in Section 4.2.5, the introduction of direct market air service, which utilizes jet aircraft, will require a major expansion of the airside and ground side facilities at the Jasper/Hinton airport. It must be recognized that this development option need not be considered until the Jasper/Hinton air service market has developed to the stage where direct air service is viable (see STEP 4, Section 4.2.5). The airport's runway requirements for both a Boeing 737 (118 passengers) and Boeing 727 (145 passengers) were evaluated using a stage length of 500 and 1,800 miles.[7] The analysis assumed fully loaded aircraft (fuel and passengers) and was calculated for both a standard day (45° F) and a standard day plus 25° F (70° F).[8] The results are presented in Figure 14.

For a stage length of 1,800 miles, required to reach eastern Canadian and U.S. points, and assuming a standard day, the Boeing 737 would require over 10,000 feet of runway for take-off, and the Boeing 727 over 12,000 feet.[9] On the average day plus 25° F, the Boeing 737 would require almost 12,000 feet and the Boeing 727 would be unable to operate. The long runway length required by these aircraft is largely a function of the Jasper/Hinton airport's elevation of approximately 4,000 feet. This factor will all but eliminate the possibility of Jasper/Hinton being served by jet aircraft larger than a Boeing 737 from eastern Canadian and U.S. points, as well as points beyond, such as Europe and Japan.

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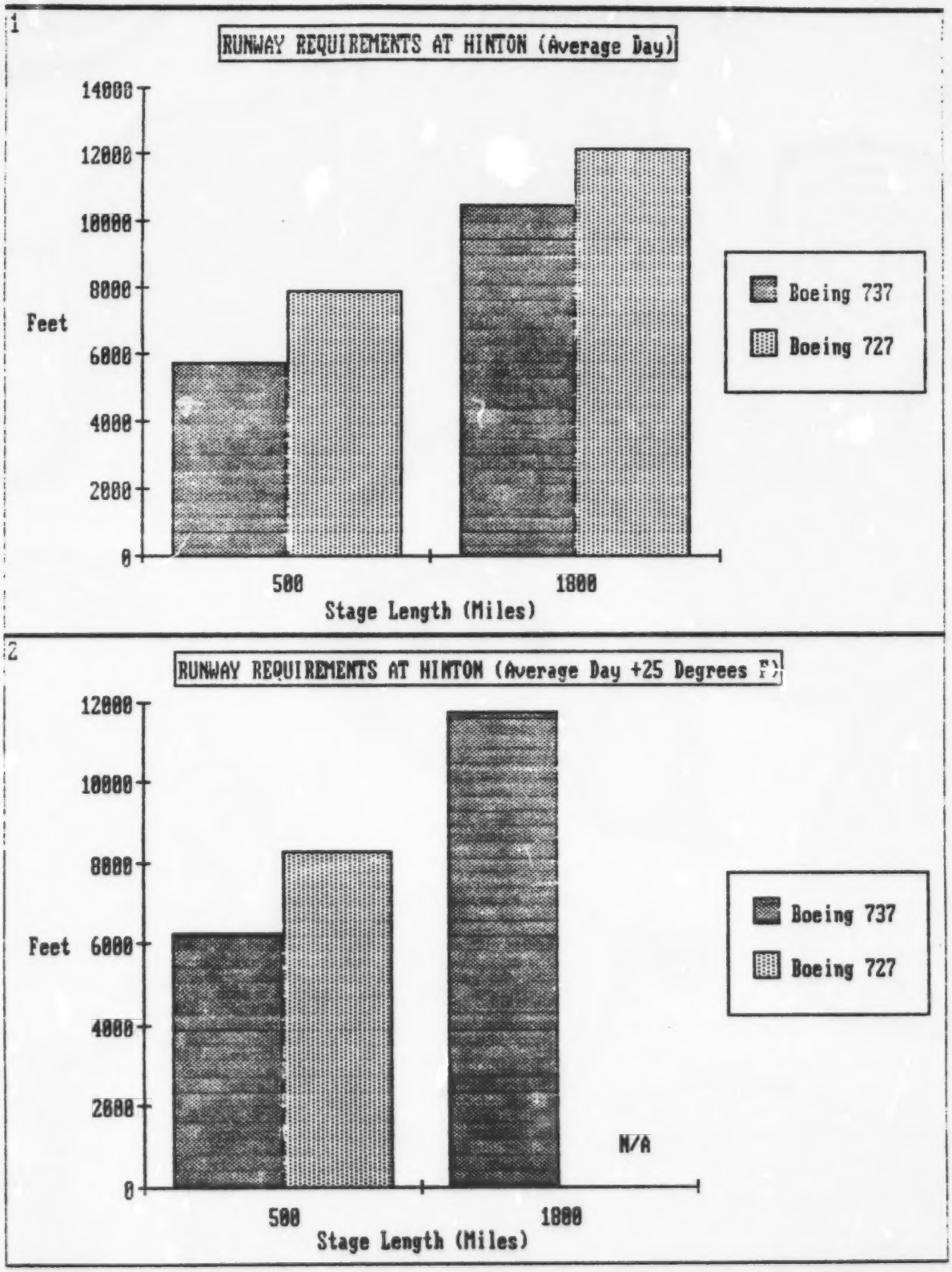
6 A Marketing Plan For Jasper In The Off-Season, 1988-1991. Stevenson Kellogg Ernst & Whinney, December, 1987.

7 Five hundred miles is roughly equivalent to the distance from Jasper/Hinton to Vancouver, and an 1,800 mile radius would include Toronto and the U.S. points of Los Angeles, Phoenix, Dallas, St. Louis and Chicago.

8 Source: Boeing 727 and Boeing 737 Airplane Characteristics, Boeing Commercial Airplane Company, 1982.

9 It should be noted that because calculated runway lengths are based on full fuel and pay loads, that operations would be possible with shorter runways if pay loads or range were reduced.

FIGURE 14



Source: Boeing 727 and 737 Airplane Characteristics, Boeing Commercial Airplane Company

Implementation

As discussed above, the addition of airport infrastructure will not be required until the Jasper/Hinton air market has developed to the point where direct air service is viable. At this time, the addition of approximately 7,500 feet of runway will be required, and is estimated to cost $16.0 million.[10] In most situations of average construction conditions, a runway will cost approximately $1.0 million per 1,000 feet. In the case of Jasper/Hinton, the terrain is such that significant earthworks would be required to complete construction. As a result, this runway expansion will be approximately twice that of average construction.

In addition to an extended runway, a major air terminal building expansion would be necessary to accommodate the increased peak operating passenger flows generated by larger aircraft. Using the Boeing 737 as the critical aircraft, the terminal building should be designed for a peak hour capacity of 100 passengers.[11] The order of magnitude cost estimate for this structure is $750,000. Jasper/Hinton currently has visual (runway lighting), non-precision (NDB, DME), and precision (MLS) approach navigational aids which would be sufficient for carrier requirements. As a result, the airport development costs presented here do not include the cost associated with upgrading or adding additional navigation aids.

The total estimated capital cost of the expansion is estimated to be approximately $16.0 million. Historically, the provincial and federal governments have taken on the responsibility of providing airport infrastructure. With the current changing philosophy regarding government involvement in the transportation industry and government budget restrictions, some of the costs of this type of expansion may be borne by the local community.

10 This is an order of magnitude estimate only.

11 This is equivalent to a S.T.E.P. (Systemized Terminal Expansion Program) 4.0 terminal building.

4.4 CONCLUSIONS

The optimal approach to developing air service and achieving the communitys' ultimate goal of direct jet air service, is one whereby short term, and perhaps less ambitious milestones are achieved, building in a step-by-step process towards the development of an air service market sufficient to support the longer term goals. The milestones identified include the development of: a scheduled ground transportation link from an air gateway; connecting air service from an air gateway (probably Edmonton, Calgary or possibly Vancouver) on a scheduled basis; enhanced regional air service which would involve the expansion of the basic connecting service by additions of frequency, destinations or carriers, and; direct air service to the actual origins and destinations of Jasper/Hinton air travellers (this service would probably utilize jet aircraft).

Four strategic options have been developed with the purpose of providing an approach to facilitating the achievement of specified milestones. These are briefly described below:

- **OPTION 1 - Connecting Ground Services:** The integration of a connecting ground service with airline schedules and marketing will enhance the visibility of Jasper/Hinton as a destination, increase the convenience of public transportation to Jasper/Hinton, and help alleviate the access constraints. It should also help facilitate development of a connecting service market and possibly stimulate off-season tourism activity.

- **OPTION 2 - Risk Sharing of Air Service Development:** As a major impediment to the development of air service is the perceived financial risk on the part of the carrier, it has been proposed that an agreement be made with the carriers, which will share the market development risk of initiating service. This approach has been adopted in several U.S. communities with some success. This may be the most important short term strategic option available to the community to develop regional air carrier service. Its success will depend critically upon the specific arrangement negotiated with an air carrier.

- **OPTION 3 - Off-Season Market Development:** The development of the off-season market will significantly improve the viability of air service to Jasper/Hinton. Unfortunately, air service is expected to be a key to increasing off-season visitation, thus exposing the fundamental problem of market development, and highlighting the importance of pursuing the previous two options.

- **OPTION 4 - Airport Infrastructure:** The development of additional airport infrastructure is not currently a constraint to establishing air service at Jasper/Hinton. Only when the Jasper/Hinton air market has been developed to the point where direct air service is viable (long term goal), will significant enhancements to the current facility's runway and terminal building be required.

In summary, it is recommended that the community quickly pursue the development of a scheduled ground service link which is integrated with the air transportation system. The success of this development will clearly demonstrate a demand for such a service and may stimulate off-season tourism in the area. Second, it is recommended the community pursue the possibility of sharing with the air carriers, the risk and cost of developing a connecting regional air service to Jasper/Hinton. Third, the on-going off-season market development strategy should be pursued with the development of a complementary and integrated transportation network, including air service. Finally, additions to the airport's infrastructure are unnecessary at this time and should be pursued only when the air service market matures to the point where direct air service is viable.

SECTION 5.0
BENEFIT/COST ANALYSIS

5.0 BENEFIT/COST ANALYSIS

The development of air service to Jasper/Hinton is expected to generate a number of benefits for both the local economy and the local tourism industry. As well, if the additional tourism generated by air service to Jasper/Hinton is incremental to the Province of Alberta (i.e. not a diversion of tourism from another Alberta destination), the province also stands to benefit. Finally, if the air service route or charter service is viable, the carriers and tour operators will also benefit. As discussed in the previous section, however, some constraints have been identified which may inhibit or delay the development of air service. Four specific strategic options have been identified which, if implemented, could help facilitate the implementation of air service at various stages of its development.

In this section, the costs and benefits of the risk sharing option (Option 2) and airport infrastructure development option (Option 4) are investigated. The costs associated with the connecting ground services option (Option 1), involving the development of a point to point CRS reservations capability, are expected to be minimal, and as a result do not warrant a detailed cost benefit analysis. Also, determining the costs and benefits of developing an area tourism marketing plan (Option 3) and its implementation are beyond the scope of this study and, as a result, this option has not been included in the analysis.

It should be noted that each of the strategic options identified in Section 4 are targeted to facilitating the achievement of a specific milestone. As a result, the options are not interchangeable and a comparison of the relative costs and benefits of each is not appropriate. For example, the risk sharing option (Option 2) is aimed primarily at attaining a base level of regional air service whereas the airport infrastructure option (Option 4) is relevant only after the air service market has been developed to the point where direct scheduled service is viable.

5.1 APPROACH

The approach taken in evaluating the benefits and costs of these options varies from the traditional approach to benefit/cost analysis. The key features of the approach taken in this analysis are summarized below.

5.1.1 Summary of Relevant Costs and Benefits

The costs and benefits of each strategic option can be analyzed collectively, summarized as follows:

Costs

- **Direct Cost of the Option:** Each of the options analyzed has a direct cost which must be borne. This cost has been estimated for this analysis in order of magnitude terms.

- **Social Costs:** Other costs of air service development which are not as readily quantifiable include increased air and noise pollution, the possible diversion of traffic from other modes of travel or, in the case of tourism, from other destinations in the province. Another perhaps important effect of the development of air service, is the further development of Jasper National Park and the Jasper townsite. This may be perceived by some to be undesirable and a social cost of air service to the area. All of these costs are obviously extremely difficult to quantify, even in order of magnitude terms and, as a result, have not been explicitly considered in the formal benefit/cost analysis.

Benefits

- **Incremental Tourism:** Incremental tourism activity to the area, via the generation of incremental tourism visits, or additional expenditures, or longer lengths of stay in the Jasper/Hinton area.

- **Regional Development:** Enhanced regional development of the Jasper/Hinton area by making it a more accessible and desirable location for industry.

- **Balanced Tourism Growth:** In addition to incremental tourist expenditures, air service may stimulate the development of the off-season tourism market which would provide greater economic stability to local tourism industry.

- **Time Savings:** Air travel will result in a real saving of time to travellers who would have otherwise used another mode of travel to Jasper/Hinton.

- **Reduced Public Expenditures:** There may be a reduction in expenditures required for other transportation infrastructure (i.e. highway capacity expansion or maintenance expenditures).

- **Other Benefits:** There are numerous other possible social benefits which are generally non-quantifiable.

5.1.2 Costs and Benefits Included in the Analysis

The economic benefits and costs of air service may be broken down into those which are generally quantifiable and those which are non-quantifiable. For example, the most obvious quantifiable benefit is that of incremental tourism expenditures. Similarly, if we place a value on an individual's time, we can calculate a value for the time saved by flying to the area versus driving or any other mode of travel. Non-quantifiable benefits and costs on the other hand, are those which accrue from the air service, but for which it is difficult to place a value on the regional, provincial, or societal gains or losses. For example, scheduled air service may provide economic stability to the region through a balancing of both seasonal demand and demand during the week. However, it is extremely difficult to quantify the value of this stability.

While it is recognized that the inclusion of all the above mentioned factors in the benefit cost analysis is appropriate, this is not possible from a practical standpoint, as many of these variables are difficult to quantify and collect meaningful data

upon. Further, several factors are relevant only to the business travel segment, which comprises a relatively small proportion of the existing and future Jasper/Hinton air service market. As a result, the benefit/cost analysis employed here concentrates on two basic factors: the estimated direct costs of the options, and the incremental tourism impacts of the air service.

As the primary function of the air service would be to service the local inbound tourism market, the benefits of each option have been solely measured in terms of the incremental tourist expenditures and their related spin-off or multiplier effects. The comparison of these benefits with the directly quantifiable costs of each option form the basis of this analysis. All other, generally non-quantifiable, costs and benefits have been excluded from subsequent analysis.

5.1.3 Break-Even Analysis

The traditional approach to benefit/cost analysis involves estimating the incremental benefits and costs associated with a project. This analysis does not attempt to directly estimate the number of new visits per year that would result from scheduled air service. Instead, the break-even number of incremental visits required to equate total investment expenditure with net incremental tourist expenditure benefits is determined. The break-even number of incremental tourist visits, thus, provides an estimate of the incremental tourism visits necessary to completely off-set the expenditure associated with the option. It is anticipated that this figure will provide the potential investor with a benchmark of the benefits required to fully recover the investment. Incremental tourist visits which exceed the breakeven figure represent a net gain to the investor.

5.1.4 Direct and Indirect/Induced Expenditure Impacts

The economic impact of tourism expenditures may be broken down into two components: direct expenditures by the additional visitors, and; the indirect and induced spending resulting from the direct expenditures. Direct expenditure impacts include the economic activity generated by expenditures of the incremental tourists on goods and services in Jasper/Hinton. Indirect impacts include the

economic activity generated in the sectors which supply materials and inputs to those businesses directly impacted. Induced expenditure impacts result from higher consumer expenditures by those individuals employed in the directly and indirectly impacted sectors, which result from an increase in household incomes.

Direct expenditure impacts are calculated by determining the net expenditure internalized by a local business person who would make additional sales as a result of air service. The net expenditure calculation accounts for the fact that the total purchase price includes the businesses' cost of production, which is not internalized as a benefit.[1] As local information regarding value added for the relevant Jasper/Hinton businesses is not available, the provincial averages have been used as a proxy. This multiplier provides a measure of the value added to production in terms of the labor income and corporate profits associated with the production process.[2] As discussed in Section 5.1.6, the indirect and induced benefits have been estimated using provincial economic multipliers appropriate for the commodities which will be directly purchased.

5.1.5 Incremental Direct Tourist Expenditures

The analysis of direct tourist expenditures is broken down by place of residence of Jasper tourists, and their mode of transportation into the province. This approach was taken as the average expenditure, length of stay, and number of trips per year varied across place of residence, destination and mode of transportation. Based on the economic multiplier categories, average trip expenditures are broken down into one of five commodity expenditure categories as follows:

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1 Using gross incremental tourist expenditures would underestimate the number of tourist visits required to break-even as the businesses' cost of operation would not be netted out of the calculation.

2 Source: Economic Multipliers For Alberta Industries and Commodities, Alberta Bureau of Statistics, Alberta Treasury

- o Accommodation and Meals
  - meals and refreshments bought in restaurants and motels
  - lodging
  - recreation and entertainment
  - all other goods and services
- o Non-Automobile Transportation
- o Miscellaneous Food Products
- o Automobile Gasoline and Oil
- o Motor Vehicle Parts

5.1.6 Economic Multipliers

Provincial multipliers have been utilized to determine the impact of tourist expenditures on total provincial economic activity (gross domestic product or G.D.P.). In general, an increase in the demand for one of the commodity groups detailed above results in an increase in G.D.P. not only in the Jasper/Hinton area, but also to a wider geographic area (since local businesses purchase goods and services from outside the regional economy). Economic multipliers have been employed to estimate the full impact of increased tourist expenditures from a broader provincial perspective.

The absolute multipliers utilized in this study assume that impacts on G.D.P. are based on changes in the demand for the commodity. Since the increased demand may be met by other than Alberta produced goods in the supply of a commodity, the multipliers utilized in this analysis account for leakages of impact outside the province. If the perspective of the analysis were broadened to Western Canada, for example, the benefits of a specified direct expenditure would be greater as more of the downstream benefits would be internalized in the larger region. Likewise, if the perspective were narrowed to a region smaller than the province, the total benefits of a given direct expenditure would be less.

5.2 OPTION 2: RISK SHARING OF AIR SERVICE DEVELOPMENT

As discussed in Section 4.3.2, an option in developing local air service is the subsidization of the carriers operations with the goal of reducing this risk of initiating service. It has been suggested that a regional carrier's operating deficit on a year-round local connecting route to Jasper/Hinton, assuming daily service, could be from $500,000 to $2.0 million. For the purpose of this analysis, the operating subsidy required for a break-even situation has been assumed to be $1.0 million. It should be noted that this figure has been used for analytical purposes only. The actual operating subsidy required and finally agreed upon between the interested party will be the result of a series of negotiations. As it is not practical to speculate on these results, an order of magnitude estimate has been employed.

It is estimated that a $1.0 million operating subsidy would require 9,300 incremental tourist visits per year to Jasper/Hinton, to break-even. This represents approximately 25 percent of the existing estimated air service market and less than one percent of total annual park visitation. Given the prospects for off-season market development, this break-even incremental tourist visitation threshold is quite low.

It should be recognized that from a local regional perspective, the incremental tourist visitation threshold would be higher, as the local region would not internalize much of the indirect and induced economic benefits generated by the direct tourism expenditures. Further, it should be recognized the analysis is obviously extremely sensitive to the amount of the subsidy. If, for example, the operating subsidy actually negotiated were $0.5 million, rather than the $1.0 million assumed in this analysis, the incremental tourism threshold would be approximately half as large.

5.3 AIRPORT INFRASTRUCTURE IMPROVEMENTS

As discussed above, the airport infrastructure development option (Option 4) is relevant only in the context of developing the direct air service market, which at this point is a long term goal. It is not an option which needs to be considered for

the development of regional commuting air service, as the existing airport infrastructure in place is sufficient to meet the needs of this level of air service.

The economic impact of upgrading the Jasper/Hinton Airport will have both short-run and long-run effects. The short-run effects are associated with the construction phase of the airport improvement. During a one year period, approximately $16 million in investment capital would be pumped into the local/provincial economy. Naturally, the Jasper/Hinton area would benefit substantially from the sudden influx of capital. As discussed above, the benefit/cost analysis presented here is based on the required break-even tourist impacts to offset the expenditure, and thus the transitory construction impacts have not been included in the analysis. If these impacts where included, it would reduce the number of incremental tourist visits required to break-even from the local perspective.

From the provincial perspective, the net incremental benefits associated with constructing additional airport facilities at Jasper/Hinton must be considered relative to alternate investment options which may be considered by the province (i.e. roadway improvements, hospital construction, etc.). As these alternate investment options will likely have a similar provincial impact, in terms of construction multiplier effects, it can be assumed the incremental construction impacts of Jasper/Hinton airport facilities is nil.

The long-run tourism benefits of this option have been evaluated utilizing the order of magnitude estimated cost of upgrading the Jasper/Hinton airport which would allow the full operation of a Boeing 737, which is $16 million. It should be noted this analysis does not include consideration of increased airport operating and maintenance expenditures associated with the subject improvements. The inclusion of these costs would obviously increase the required number of break-even incremental tourist visits.

It is estimated that the break-even incremental tourism threshold, to recover the $16 million infrastructure improvements over the life of the assets, is approximately 150,000 tourists. Assuming a payback period of 10 years, the annual incremental tourism threshold is an average of 15,000 tourists per year.

5.4 CONCLUSIONS

A break-even benefit/cost analysis was conducted for both the risk sharing option (Option 2) and airport infrastructure development option (Option 4). This analysis was conducted from a provincial perspective, and as a result, includes all estimated direct and indirect/induced impacts which will accrue to the province as a result of the break-even incremental tourist visits reported.

The risk sharing option (Option 2) is estimated to require an annual operating subsidy of $0.5 million to $2.0 million. Assuming that the actual subsidy negotiated falls within this range at $1.0 million per year, the break-even incremental tourism threshold is estimated at 9,300 visitors. This represents a relatively small increase in total annual visits to the region of less than one percent.

The other option analyzed was the airport infrastructure option (Option 4) which will be relevant only when the air service market is developed to the point where direct scheduled air service from specific markets can be supported. The infrastructure investment required to accommodate the jet aircraft which may be utilized at this point, is estimated at $16 million. The total break-even incremental tourism threshold is estimated at approximately 150,000 visitors. The inclusion of additional airport operating and maintenance costs, which would be associated with the proposed improvements, would increase the total cost of this option, and correspondingly increase the number of break-even incremental tourist visits.

APPENDIX A
INBOUND TOURISM AIR SERVICE MARKET

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INBOUND TOURISM AIR SERVICE MARKET

Market	Total Annual Tourism Market	Proportion Exiting Alta by Air	Proportion for which Jasper is a Primary Destination	Total Inbound Tourism Air Service Market
canada	222,388	17.6%	42.9%	16,767
bc	105,227	4.8%	50.7%	2,578
sask	21,528	9.0%	61.7%	1,194
man	18,919	9.4%	41.6%	743
ont	48,377	33.4%	28.0%	4,521
que/atl	28,338	49.8%	39.6%	5,587
other countries	44,958	30.7%	19.4%	2,675
europe	40,668	30.0%	18.0%	2,189
asia	561	65.6%	43.2%	159
oceania	1,684	48.0%	10.3%	84
other	2,046	22.6%	22.7%	105
us	178,654	19.7%	55.1%	19,388
pacific nw	25,778	8.6%	70.7%	1,574
calif	43,718	26.8%	52.7%	6,181
nv	4,629	0.0%	70.7%	0
sw	13,942	0.0%	30.2%	0
wn cent	16,412	9.4%	69.0%	1,069
ws cent	11,347	51.1%	49.0%	2,844
east cen	16,557	9.5%	55.8%	881
ne coast	29,154	31.6%	47.7%	4,399
se coast	11,520	26.5%	34.8%	1,064
non-con	5,598	0.0%	33.3%	0
total	446,001	19.7%	43.9%	38,685

NOTE: Total annual tourism figures incorporate an 80% air capture rate.